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# Computer Weekly

Thursday, April 28, 1983

**PT7 cuts costs**  
FERRANTI Computer Systems

## Telecom freedom 'is not working'

by Donald Kennett  
WRITE to the Industry Minister — because he doesn't know that telecommunications liberalisation isn't working. That was the message to computer users last week from Michael Corby, director of the Telecommunications Users Association.

Speaking at a Datapoint user group meeting, Corby said the government had set up the structure of the liberalisation mechanism wrong and it should scrap it and start again.

Just as the 1969 Post Office Act had produced a veneer of change with no effective difference, the 1981 British Telecommunications Act had the same goal of making BT into a more commercial type of organisation and had failed in the same way by enshrining BT's monopoly, he said.

The current Bill was necessary because of the problems with the last one, he said, "but it has all the hallmarks of being the same thing."

In Corby's view Ofel, which will administer BT's operating licence, will not be a professional enough body — on present evidence of the government's plans — to do a proper job and will just add to the present fog.

Making Mercury the only network competitor will fail to provide effective competition for BT. And the mechanism set up to oversee the liberalisation of network attachments is ill-conceived and amateurish as a result of trying to do it on the cheap. The Department of Industry at the top has set up a steering committee with about 25 members and four civil servants. It is very large because it has just about every conceivable interest represented on it, thinks Corby.

Appointing the British Standards Institution to draw up the standards was a grave mistake because of the way it works by consensus.

"In practice it starts off with a draft paper from BT. This deals

with small, simple issues, but just for telephone answering machines it was 90 pages long. And it is the same procedure for every single item which might be attached to the network.

The operation of the British Approvals Board for Telecommunications, which after two years' preparation has so far approved just one telephone, was illustrated by a Datapoint executive who said: "We have been fortunate to be beating BABB by going through the old BT procedures."

To which Corby replied: "Isn't that ludicrous, that we supposedly have liberalisation and people think they are fortunate to be going through the old BT procedures."

He went on: "Business thrives on data communications, PABXs and telex. Small PABXs are supposed to be liberalised in July. What kind of position are decision makers in? It hasn't happened for anything else; when it is going to happen for this?"



CORBY... Nothing different about the new Bill.

## Top business figures tackle world trade barriers

by John Kavanagh  
A POWERFUL group of international business and government leaders is working to bring down barriers to international trade in services ranging from banking to the computer bureau business.

The move has been welcomed by the UK services industry, which is restricted by national communications monopolies and data protection laws.

The 19-strong group is chaired by Robert Strauss, one of former US president Jimmy Carter's right-hand men. It includes Sir Peter Green, chairman of Lloyd's of London, Sir Jeremy Morse, chairman of Lloyds Bank, other leading commercial and industrial figures and former government ministers from Belgium, Sweden, Japan and Malaysia. The group is backed by the Trade Policy Research Centre, a non-profit-making body which is privately funded.

"Trade in services has become a major component of world trade," said the centre. "Alarmed by increasing impediments and distortions to trade in services and recognising the growing contribution of services to employment, exports and growth, the committee agreed urgent international action."

The commitment will look at international rules and the "proliferation of national restrictions to international information flows".

Chris Gent of the UK Bureau Barle and chairman of the Computing Services Association's bureau group, said the main problem for UK services firms was the monopoly the national communications authorities had in other European countries, especially when British Telecom's monopoly was being eased (see story page 2).

Alvey is accepted at last. But there are still one or two reservations in the industry, as George Black reports

## Grant cut makes it hard for supremo Oakley



HUGHES... Confident.

The government decision to cut support for projects in the Alvey programme from 90% to 50% has drawn widespread criticism.

Many leaders and politicians who share their technology with private companies, unwilling to share their technology with the state, will opt out of the programme.

It is thought that some small companies rich in software expertise may lack the capital to make an effective contribution.

The newly-appointed supremo, Brian Oakley, of the Science and Engineering Research Council (SERC), admitted that the top-level decision to limit the grants would make his job that more difficult.

"It doesn't necessarily weaken the whole programme, but if you want to get real co-operation this is certainly an impediment," he said. "A lot of the best software manpower resides in these smaller firms and I certainly hope they are

not going to be excluded because of this."

He did not think companies would be deterred by the requirement to pool the resulting inventions. "After all, they will retain the ultimate property rights, so it doesn't mean they won't make a profit."

Another criticism was levelled at the validity of the VLSI investment. BIS Applied Systems chairman Roger Graham asserted: "We should only spend money on it if

there is clear evidence that British manufacturers will really gain a significant share of the world market."

Graham is convinced that an Alvey-type programme will only succeed if it is firmly addressed to the marketing of products.

The case against the 50% upper limit was put in the House of Commons by Labour industry spokesman John Garrett: "The spread of new systems will be hit by this penny-pinching restriction," he said, "and many small, innovative companies will be unable to join the programme."

Logic chairman Philip Hughes, an Alvey committee member, said the change would seriously weaken the programme. "What the committee had in mind was a highly directed programme of research leading to useful products on the US and Japanese model." The idea that firms getting 90% subsidies would not be committed to it, he said, "is ridiculous."

And David Rodway, software technical director for Software Sciences: "We obviously will be involved but at this lower percentage we shall be thinking harder about the sharing of results. The scheme could come down to just a few big firms, whereas the idea was that everyone would pitch in together."

With the criticism came much approval of the appointment of Oakley. Hughes said: "I have a lot of confidence in him."

## Where will the funding come from?

ALVEY committee recommendations for a £350 million, five year advanced information technology ("fifth generation") research programme have been accepted, but there will be no new money.

The government rejected Alvey's proposal that it should contribute 90% of some projects, limiting its share to 50%. Overall its share is to be 57%, compared to the recommended 60%.

It will put in up to £200 million — £110 from the Industry Department, £50 million from Education and £40 from Defence. The industry is being asked to inject £150 million.

The money will come from funds already allocated to the three departments.

Industry secretary Patrick Jenkin said the eight-month delay in

making the statement was due to talks with literally hundreds of private firms — though informed sources have said it was caused by the PM's personal doubts and the difficulty of recruiting a supremo.

The £30,000-a-year top job goes to 56-year-old Brian Oakley, secretary of the Science and Engineering Research Council, who will start work at the beginning of June — two months later than Alvey wanted.

He will take on four deputy directors, one for each of the chosen fields: VLSI chips, software engineering, intelligent knowledge-based systems and the man-machine interface.

He reports to a supervisory board headed by Marconi chairman Sir Robert Telford.

Defending the reduction of public support to 50% Jenkin said: "There have been too many examples of science being government-financed and then having results divorced from the market because there was no industrial commitment."

He denied that this would exclude smaller companies from participation.

He accepted Alvey's view that foreign multinationals should take part only if they agreed to share their achievements with UK firms, adding: "They must exploit the technology which is developed in the UK and we shall require certain guarantees that their technological ideas will not find their way abroad."

This could be ensured by following rules on intellectual

property rights laid down in the EEC Esprit programme, he went on to say.

Oakley and Telford both stressed the "vital role" of VLSI and software, placing less emphasis on intelligent knowledge-based systems, IKBs and man-machine interfaces.

First contracts could be under way by the end of summer. The directors have power to second staff from industry but have no central research facility of their own.

Vastly larger sums would be needed to exploit the scheme in the market, said Jenkin, and the directors could come back to the government to ask for grants for new developments. He said the venture would continue to be known as the "Alvey programme".

## Shipbuilders' switch to IBM attacked by union

by John Riley  
BRITISH Shipbuilders, which has opposed orders going to foreign shipyards, was attacked last week for switching from ICL to IBM computers.

The nationalised company, British Shipbuilders, which runs Britain's 30 or so shipbuilding yards, has been switching from ICL to IBM mainframes and ICL has not even been asked to submit tenders, claims the Association of Professional, Executive, Clerical and Computer Staff (Apex).

The union is especially concerned because of reports that BS is planning considerable investment in computer technology, particularly in CAD/CAM.

Keith Standing, national secretary of Apex and a member of the Shipyard Negotiating Committee of the Confederation of Shipyard and Engineering Unions, said: "In 1979, four out of the five Scottish shipyards had ICL mainframes, whereas now four of them have IBM mainframes."

However, both ICL and British Shipbuilders say they are in close contact. "As far as we know we are being invited to tender, and have gained £1.5 million of business out of British Shipbuilders in the past two years," said an ICL spokesman.

Apex claims that ICL has not been asked to tender for mainframe replacements on IBM sites, although IBM tenders for ICL replacements, and that ICL was not asked to tender for the new Tyne Shiprepair system or the new word processing equipment (IBM) installed at British Shipbuilders' head office.

Apex claims that IBM now supplies nine of the 10 largest shipbuilding companies in Britain. "It is a contradiction that a nationalised industry insisting that



"IBM now supplies nine out of the 10 largest UK shipbuilding companies."

British shipping lines place British orders has re-orientated its whole computer policy from two suppliers (including ICL) to a single supplier where the profits to that supplier are going back to the US," said Standing.

A senior spokesman for British Shipbuilders claims that Apex has got hold of the wrong end of the stick.

## AT & T International thinks small with plans for European market

by Donald Kennett  
AT&T INTERNATIONAL will have a slow build-up in Europe. A senior spokesman for the parent company, Bill Mullane, said in London earlier this week: "AT&T International is a very small operation and it can afford to remain humble for a long, long time. We will be viable, but we will be well down the list of top companies for some time."

The AT&T annual report for 1982 revealed that during the year the international division had more than doubled its sales to \$403 million.

AT&T's European presence in Europe will be most visible in the immediate future through the joint venture with Philips announced last year, details of which are expected early next month. But the company already has offices in 14 overseas countries.

"We thought the Philips talks would be finalised this week," said Mullane. "But it isn't moving as quickly as everybody thought."

The delay is simply due to the amount of detail to be discussed in deciding how much each party's contribution is worth.

Mullane said that AT&T would certainly not adapt its whole product range for international markets. But that still leaves plenty of scope.

First, new products from the parent company would increasingly be designed to world standards and with world markets in mind from the outset.

came from Bell. Added to these are the 256K RAM chips which are in production at AT&T's manufacturing subsidiary Western Electric.

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## Euro MP warns on EEC subsidies

John Riley  
EUROPEAN Watchdogs will ensure that companies do not get their Alvey programme money with Common Market subsidies, top IT policy maker Raymond Appleyard warned last week.

Appleyard, who is in charge of research and development in the European Community, said, "We would not expect industries to collect 50% subsidies from the Alvey Programme and development programme, and Appleyard is concerned that the Community effort must not cause

step and are setting up the proper machinery to co-ordinate national and international efforts."

Esprit, the £2.4 billion European collaborative research programme to counter the fifth generation threat (see page 8) which is expected to give 50% subsidies to participating companies.

Esprit overlaps in some areas with the Alvey programme, and also with the new £140 million French IT research and development programme, and development projects.

"Many of the research ideas and innovations come from small systems houses and software com-

panies and without them software engineering and man/machine interfacing programmes will be affected in particular."

The Labour Euro MP Barry Seal, who was formerly a Senior Lecturer in System Control at Huddersfield Polytechnic, does not consider that the British initiative will affect European plans for international IT collaboration.

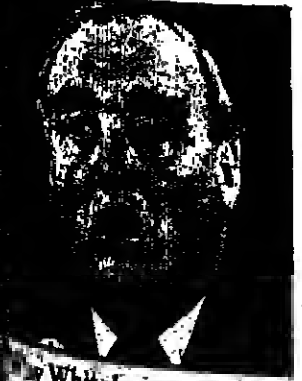
However, he commented that the £200 million announced by the government is not nearly enough when compared with the Japanese and US IT research and development budgets.

national efforts to be reduced, but at the same time industry must not be over-supported."

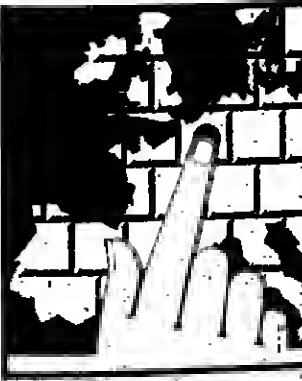
Alan Benjamin, Director of Communications for software house CAP, which is involved in feasibility studies in advance of the main Esprit programme, disagrees, and wants more support for industry.

"Both Esprit and the British government initiative will suffer because small companies cannot afford to pay 50% of research and development projects."

"Many of the research ideas and innovations come from small systems houses and software com-



Whitelaw...



Meddling may delay Esprit...



IBM users put on a happy face...

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# Tax threat to US software industry

by Howard Karten  
US COMPUTER industry representatives descended en masse on an Internal Revenue Service (IRS) hearing last week to protest at proposals that would eliminate tax credits for software development costs.

The IRS proposes to limit tax credits for software which is not viewed as having an element of risk. The immediate effect would be to drive up costs for businesses which spend considerable sums in this activity.

The longer-term effects were hotly debated, with one well-known IRS accounting firm, Arthur Andersen and Company, claiming that the ultimate effect would be to threaten the position of the US as a world leader in software development.

## Social effects of chip reports are biased, claims study . . .

by John Riley  
MOST material written on the social effects of the microchip is biased and oversimplified, aiming to influence and not to inform, says the most comprehensive study yet to be published on the subject.

Commissioned by the Dutch Ministry of Social Affairs, the 360-page report concludes that it is difficult to evaluate the effect of chip technology on conditions and quality of work. There are it says, few adequately quantified statistical data of the right kind (such as on job types and functions within each economic area) and in many cases a lack of thought-out methodology to deal with it.

The evidence was gained from a nine-month study of around 500 key documents and formal interviews in 10 countries, including Japan and the US.



GRANTHAM . . . Buying British.

## ...but union has no time for debate

by John Riley  
A PROMINENT computer industry trade union could not find time to debate new technology motions at its annual conference held last week.

Motions put before the Association of Professional, Executive, Clerical and Computer Staff (Apex), but not discussed, related to the Data Protection Bill, new technology and health and safety, and new technology and unemployment.

## Ring design for US private exchange

by Donald Kennett  
ZTEL, a new US telecommunications company, is using a stack of interconnected local area networks as the basis of its private telephone exchange, the PNK (Private Network Exchange).

The local area network it has chosen is the 10 Mbit-per-second token-passing ring design for which a draft standard is expected to emerge in June from the US IEEE (Institute of Electrical and Electronic Engineers) committee 802.5, based on a proposal from IBM.

Ziel vice-president for sales and marketing, William Karayanos, said that using the ring-based architecture meant that further ring and processors could be added to expand the exchange's capacity almost limitlessly. The system's addressing scheme allowed for 131,000 devices, he said.



POLLARD . . . "Still selling concepts rather than products."

## Electronic mail commercial launch

by George Black  
APPLIED Data Research's electronic mail system EMAIL, unveiled at Software Expo last November, has now been launched in a commercial version in this country.

The IBM mainframe system is installed at test sites with British Steel and Rowntree Macintosh, both of which are considering making an investment in the "office of the future" to the tune of some £20,000.

## Services firm makes micros

by Nuala Moran  
FREIGHT Computer Services (FCS), the data processing arm of the National Freight Consortium, has gone into hardware production. The company is producing microcomputers at factories in Enfield and Willesden, North London.

There will be 10 models in the FCS Falcon range, of which four are currently available. The range starts at £1,750 for the FCS Falcon 1000, which is being marketed to small businesses. The FCS Falcon 1000 has a detachable keyboard, 12-inch VDU, 64K of dynamic RAM, 2K video RAM, 2K character set RAM with twin floppy disk drives of 380K each, plus RS232C Centronics parallel and synchronous interface ports.



KBRVATOS . . . Limitless expansion.

The central processor is based on the Zilog Z80A, and industry standard CP/M operating system is incorporated.

## SALES BRIEF

### Cray lands 'super' orders from Europe

CRAY Research had a good week with two big orders for supercomputers on the way from Europe. The company clinched the first sale outside the US of the I/M series supercomputer, announced by Cray X-MP memory last September, to the French oil company Elf for \$7.1 million.

The European Centre for Medium Range Weather Forecasting in Reading, Berkshire, has been cleared by its member governments to order a Cray X-MP computer, currently priced at between \$9 million and \$11 million.

### Speedy system

LEADING forwarder of freight, Unispeed International, is launching £500,000 on a Digital Equipment PDP-11 system to hold information of availability of cargoes, and scheduling of flights and surface deliveries. Management Control Systems is supplying the software, and tailoring the system for Unispeed.

### Geac booked

THE British Lending Library has chosen Geac Computers of Bristol to supply a package to catalogue 4.5 million books, and hold details of recent acquisitions. The package will run on Geac's 8000 minicomputer, and will be up and running by mid-1984.

### Iraqi deal

PLESSEY has signed a technology transfer agreement with Iraq. The deal with Electronic Industries covers push-button telephones and accessories with production volumes estimated at 100,000 a year.

### Soviet spares

REDIFFUSION has just completed delivery of 50 computer systems to the Soviet Ministry of Gas for spares and maintenance planning on the Siberian gas pipeline. The order, worth £9 million, was placed in October 1981, but was delayed by the American government's embargo on the pipeline. The systems include 247 teletype terminals with Cyrillic videotex.

### Aim's record

AIM, the Hull-based writer of software for legal applications, won record sales of £250,000 for its Charter package in March. The systems went to 15 law practices for accounting, time recording and exception recording handling.

### £2.7m contract

A £2.7 million contract for Prestel equipment has been won from the Far East by GEC Computers, part of the huge GEC electrical group. The contract, from the Malaysian government, covers a five-year period, and includes GEC 4000 computers, terminals and British Telecom Prestel software.

### BICC picks CA

CABLE maker BICC has plumped for Computer Automation to supply a real-time operating system for development of a process control network. BICC will use Computer Automation's Cartos operating system, which will be supplied with a minicomputer in a £50,000 contract.

### British hat-trick

A SMALL UK software house has picked up three US orders for a new text retrieval system for microcomputers. The American Psychological Association, which has already tested one of the firm's systems developed by Delta Design and Graphics of Nottingham, is from the TIC.

## Petrol PoS trial expands

by Donald Kennett  
BRITISH Telecom Merlin last week outlined its plans to become a dominant force in the UK office automation market.

And chief executive Gordon Pocock said Merlin was very likely to market overseas when the UK organisation is in place.

The main planks of the strategy are to be the provision of a broad range of customer support services and a commitment to open systems interconnection.

The organisation's first three products are versions of ICL systems, supplied under an agreement announced in December. They have been enhanced by the addition of autodial modems and the option of access to the telex network via a link to a BT Puma electronic telex terminal.



RAWKSHAW . . . Not fading.

## CACI forges a Personal link

by John Kavanagh  
ANOTHER big US name has joined the growing group of services firms supporting links between personal computers and mainframes. The big US mainframe consultancy CACI has joined Gullnet, Informatics, Management Science America and McCosmick and Dodge with products aimed at tying the IBM Personal Computer to other IBM machines.

CACI has made its first move into the microcomputing market with a relational database for the Personal Computer which is claimed to be compatible with IBM mainframe database products. The company also has word processing and interactive training packages for existing big-selling products such as Wordstar and dBase.

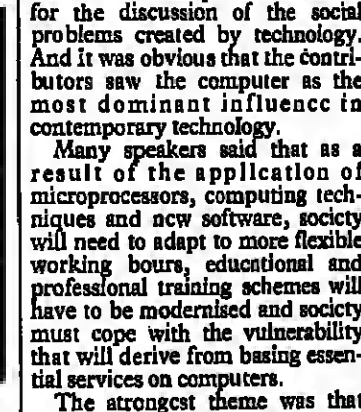
# Merlin outlines its master plan

by Donald Kennett  
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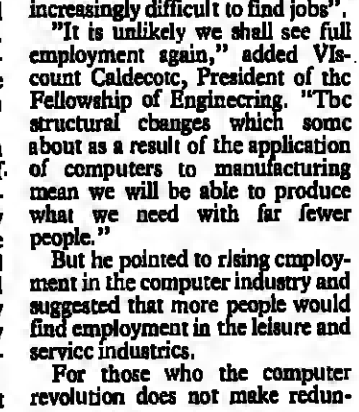
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VDU which has an autodisler capable of storing four telephone numbers and two log-on passwords.

For the UK market, Pocock is planning a slow build-up to nationwide coverage over the next 10 months. "BT is going to go slowly and decisively into office automation," he said. "We'll only supply where we can service and we'll only roll out the whole organisation when we can supply the whole care programme. We're going to do it slowly and carefully so we can be sure we do it right."

"Our conviction in working to open systems means that the user won't get locked in. We will expand the opportunities for him."

Merlin will have three regional offices by March next year, supplemented by local units in telephone area managers' offices or, where those are unsuitable, in their own premises. The first regional office, where all the customer and own staff training will be done, opened in Basing near London last year. Others are planned for Leeds in July and Birmingham next March.



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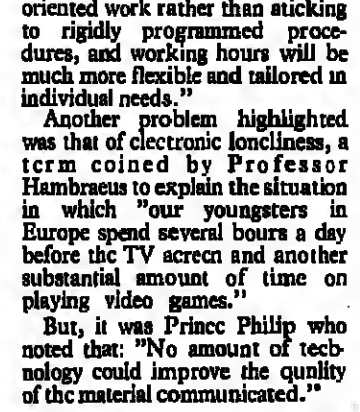
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READ . . . "We hardly ever lose a 1100 account."

## Sperry spends to improve storage

by Andrew Thomas  
SPERRY has bought into a subsidiary of Control Data in a bid to enhance its range of mass storage devices. The amalgamation of its Information Storage Systems operation at Santa Clara, California, with Magnetic Peripherals, 67% owned by CDC, gives Sperry a 13% share of the combined operation.

Other companies with an interest in Magnetic Peripherals are Honeywell with 17% and Cii Honeywell Bull with three per cent. The Santa Clara plant is responsible for the development and manufacture of disc stores, and now becomes the MPI Santa Clara disc division.

And Sperry has updated its IBM interconnectability with the development of SNA gateways. Up till now, Sperry's IBM communications were restricted to the old binary synchronous communications protocols.

The SNA software runs in Sperry's Distributed Communications Processor (DCP), and first releases are expected in the summer. The initial release will permit the connection of IBM 3270 and Sperry UTS 4000 terminals to DCPs, allowing them to communicate with either IBM or Sperry mainframes.

All Sperry systems and terminals will appear to the IBM network as 3270 terminals using SDLC protocols. Interactive applications can run under CICS, IMS or TSO, and batch operations under JES2 or JES3.

Mike Russell-Carter, UK director of product marketing, hopes the SNA facility will win more users from IBM.

"Relatively few of our customers are first-time users," says Russell-Carter. "The migration of our competitors' users to Sperry systems has been the basis of much of our base growth for many years."

Russell-Carter claims that 20 UK IBM sites have gone to Sperry in the last two years, and that 20 of the 70 UK 1100 installations have been won from ICL.

"ICL is the prime source of new accounts," says Bill Read, general manager of UK computer systems operations. "We hardly ever lose an 1100 account unless it's for political reasons." His words sound particularly bullish in light of reports at the end of last year which cited a severe slide in order books.

## North Yorkshire - High Tech knowledgeability

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April 11 1983



# Lowest bid 'not always the best'

by John Riley  
P.H.I.C. authorities should not always accept the lowest bid when buying computer equipment, said Information Technology Minister Ken Baker last week. This view is in marked contrast to the government's traditional purchasing policy.

Addressing a meeting of Britain's top Health Service administrators, Baker said: "Traditionally, the Civil Service as custodian of the public purse, takes the lowest tender when contracting."

"But if we want true value for money, public buyers must have close relationships with suppliers to explore areas that are mutually beneficial and not always take the lowest bid."

Baker affirmed that medical electronics is a priority area and called on close collaboration between British hospitals and medical electronics companies for equipment and software trials. Collaboration would help build up

the reference user base in the National Health Service which would help companies export their products.

He gave the example of ICL, which, he said, "is hoping to win contracts for health care systems in Singapore on the basis of its success in winning contracts in the UK."

There was an exhibition of 22 companies involved in medical electronics, including the two software companies in the Doherty's Micros for GPs scheme, CAP and British Medical Data Systems, as well as ICL, Universal Computers and others.

There were several American companies exhibiting, including Burroughs, Apple and NCR. Some had felt squeezed out of the large contracts but were pressing ahead on the smaller discrete applications.

Graham Roberts, chairman of the National Health Service Computer Policy Committee, delivered

ROBERTS... wants health boundaries abolished.

a paper to the meeting calling for the abolition of boundaries between the Department of Health, and the regional and district health authorities.

The NHS is considering how it

can move over to database management systems effectively and efficiently.

It is also pondering on how best to introduce microcomputers and minicomputers.

## French five year plan needs revamp

by Jack Gee  
FRANCE'S five year, £14 billion programme for the electronics industry needs to be revamped.

A top government advisor has issued a report calling for more coordination of the overlapping efforts of government agencies.

Philippe Lemoine, a senior civil servant at the Ministry of Industry and Technology, drafted the report at the request of Prime Minister Mitterand with the aim of giving a new spurt of energy to the Filière Electronique.

Lemoine praises the UK for creating a post of minister for information technology. Launching a major effort to make France computer conscious, he calls for France to set up an information technologies commission.

Lemoine's 142-page document has been the subject of a series of press leaks (Computer Weekly recently quoted his "census" of computers and robots).

He says bold steps must be taken if France is to achieve its target of ranking equal with Japan in the new technologies by the next decade.

France, which had 20.7% of installed computers in Europe five years ago, now possesses only 19.5%. At the present rate of decline it might have only 17% by 1985, according to the Lemoine Report.

In microcomputers the French share, in terms of value, is 15.3% compared to Britain's 28.7% and West Germany's 24.1%.

Lemoine voices pessimism about the prospects for France's Teletel Videotex technology. He says that each of the 2,300 terminals installed in homes at 12,000 near Paris during a two-year community test is being used only 1.5 times weekly on average.

The senior civil servant also complains that only 500 teachers a year are being trained to use microcomputers scattered across France's 77,000 schools.

Lemoine reports that an information technology commission should harness the efforts of government agencies for computer technology which span the key areas in which urgent action are required.

Lemoine lists these as research and local government, small firms, big firms and service industries, education, and communication.

Lemoine also condemns the government's purchasing policy which favours nationalised companies, particularly CII-Honeywell Bull.

He says it should buy computers and other electronic products from the most competitive suppliers.

## Boards 'shouldn't pussyfoot'

by Boris Sedacca  
THERE is no room for boardroom boys pussyfooting around," were the words of Michael Doherty, the first speaker at the Computer Trade conference, in describing the computer dealer market place.

Doherty is regional sales manager for Northamber, a fast-growing distributor of computer printers.

"I am not saying that we should be cowboys, but decisions have to be made very quickly in this business, and established companies often regard fast-growing newcomers as cowboys," Doherty said.

Russ Nathan, managing director of Romtec, a market research consultancy specialising on the computer trade, made the surprising statement that newsgroups are the

largest potential market for volume sales by microcomputers.

Romtec surveyed around 1,200 existing and potential users of computers about the role of microcomputers, and identified 35 vertical markets. A surprising outcome of the survey was that the most popular benefits sought by the users are the hardest to quantify. Tangible benefits such as lower stock levels, reduced overheads and improved cashflow were the least popular.

"Having a software package which meets the requirements of a vertical market does not by any means assure financial success," Nathan contended.

"It helps to know what the market will pay for the package but it is what you must provide with it that may not be fully taken into account. Preparing and publishing

documentation professionally is a non-trivial activity in terms of resource and cost. If it is not done properly, margins can soon be eroded by customer queries."

Nathan claims to have identified some unpublished markets and adjusted popular acclaim for better known markets. "For example, would you have thought that newsgroups sector has the top volume potential? Or would you have believed that the insurance brokers sector has less volume potential than grocers?"

Delegates were treated to a surprisingly candid reply by IBM to a question from the floor about its requirement that dealers must also sell other manufacturers' kit to qualify for a dealership.

Nigel Hensell-Thomson, manager for personal computing dealer marketing at IBM, gave two

reasons. "Firstly, there is always the possibility that we get out of a market so we do not want to pull the plug on a dealer. We are not in the business of putting people out of business."

"Secondly, it is the nature of retailing that IBM may not have a piece of software required by a user, and the dealer should not lose a sale because of this," he explained.

It is tempting in the face of success to forget where the money is to come from for new sales. Gwyn Jones, chairman of Business Micro Systems, warned against this.

"One of the best tips I can give is to keep an eye on the cash most closely than the financial director, because by the time he finds out, double will have struck and he will be on to you to increase sales to get more cash in."

## Middlemen grow in importance

by Boris Sedacca  
THE growing role of middlemen in providing hardware and software to computer users was brought home to delegates with considerable force last week at the first annual Computer Trade Show and Conference.

Major manufacturers recognise that volume sales in an exploding market can no longer be achieved by going more and more direct sales staff.

Speakers at the conference made clear that data processing managers will increasingly find themselves involved with middlemen and intermediaries when they want to buy equipment.

The trade show and conference, held at Wembley, is sponsored by Computer Weekly and its sister journals.

It is representative of the changing channels that are being formed between manufacturers and the ultimate end user of their products.

The launch in the UK of the IBM Personal Computer earlier this year is a case in point. IBM will not sell direct to an end-user for quantities of under 20 machines.

There is nothing remarkable in

the concept, which is practised widely both in and out of the computer industry and has been for some time.

But for IBM, it marks a dramatic departure from its past stance of keeping direct control of the way products bearing its label get to the end-user.

Although control of this activity is now delegated, IBM takes few risks and potential PC dealers are subjected to rigorous vetting before they can qualify for the role of dealer.

Particularly important to IBM is the dealer's ability to support the product on their own premises.

On the other hand, Digital Equipment (DEC) delegates the sales function but still insists on maintaining the equipment itself. The dealer is obliged to offer Digital's maintenance agreement to the end user when it sells a DEC personal computer.

At the other end of the scale, anybody prepared to put cash up front to the tune of £1,500 can become a Sinclair dealer, the only stipulation being that the dealer must offer the complete Sinclair range of products.

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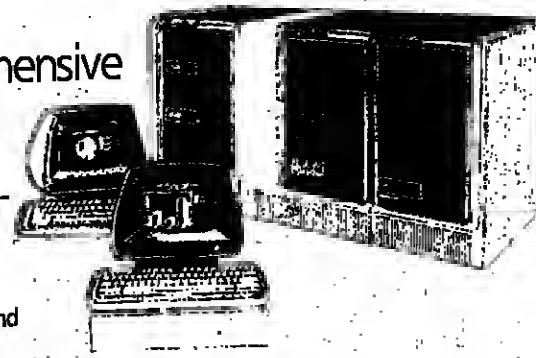
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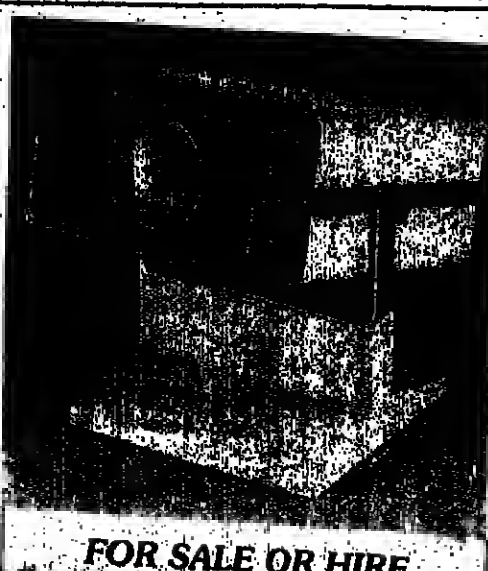
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FOR SALE OR HIRE



Will the Esprit programme make Europe the IT leader? Or will rivalry and bureaucracy wreck it? John Riley reports

# Meddling ministers and cash squabbles threaten Esprit

EUROPE is worried and its commission are taking action. The Commission will try to outflank the fifth generation challenge from Japan and the US - by approving the 10 year Jull Esprit programme (European Strategic Programme in Information Technology) this week.

Critics are worried that, after the inaugural launch, the programme, which is likely to cost £2.5 billion, will go the way of other Community data processing programmes. In other words, they expect bureaucratic delay, insufficient funding and commercial and national rivalries.

The main problem is the long lead times between a programme's initial proposal by the Commission and its approval by the Council of Ministers. There is then a further delay between approval and allocation of the budget, as history shows.

For instance, the £9.3 million Multiannual Informatics Programme to promote technology transfer was proposed in November 1976, but not approved until September 1979.

The £24 million Microelectronics Programme to promote microcircuit design was put forward in September 1979 and approved in December 1981. The Microelectronics Programme was further delayed and the first contracts have only this month been decided.

The proposal for the headline-hitting main Esprit programme is to be announced in May, and Euro MPs, led by Belgian Fernand Hermann, want quick approval.

Despite the headlines the work so far has been towards feasibility and pilot studies. Several companies are working on six month feasibility studies and including Imperial Software Technology, Seicon, Bosys, CAP, GBC, Logica and STL. Contracts for 16 one-year pilot projects for Esprit worth around £7.2 million are being negotiated and their announcement is imminent. But these have gone ahead before the main Esprit programme has been agreed.

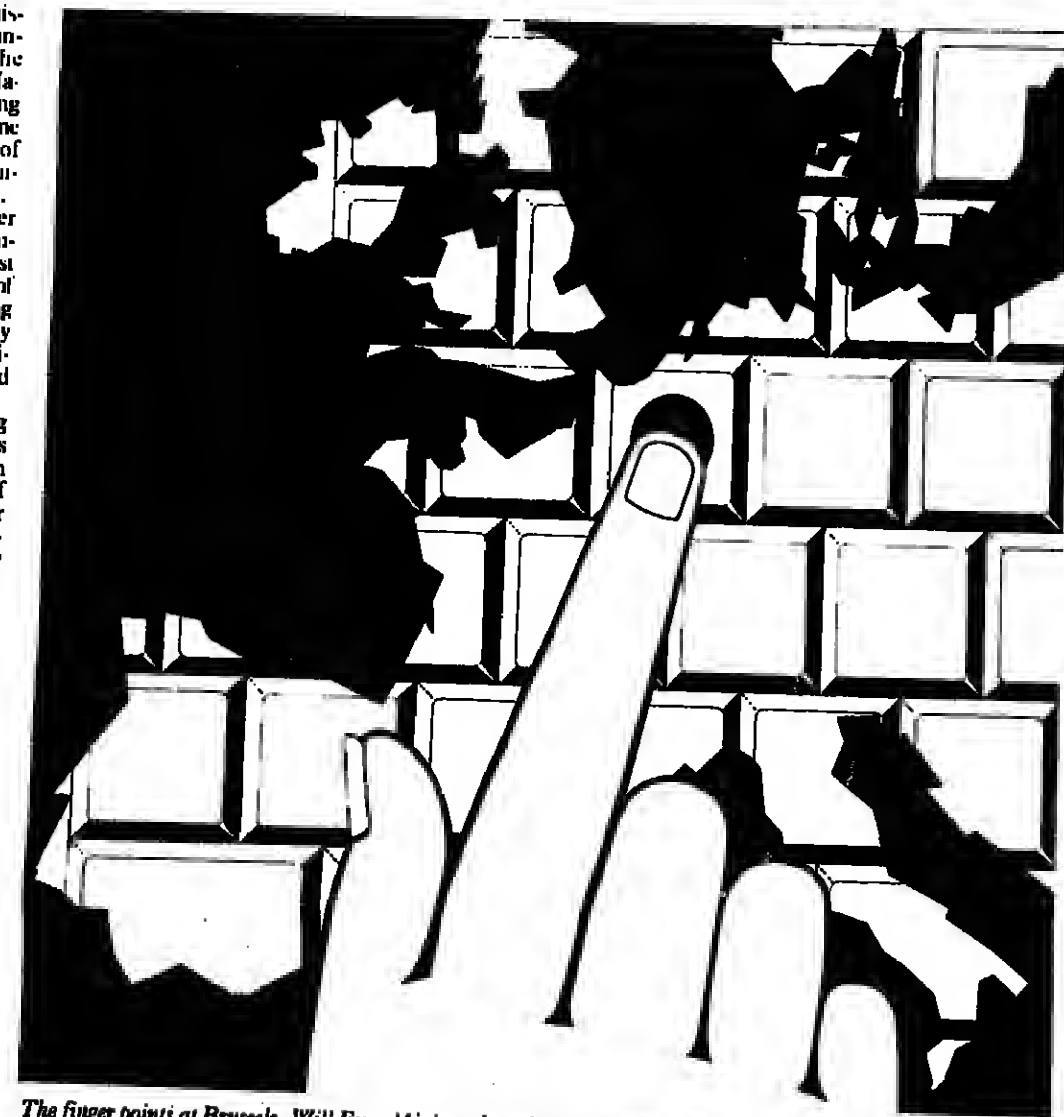
The revelation of Japan's plans for its fifth generation computer programme in November 1981 shocked European politicians, administrators and industry, and was the spur to the genesis of the Esprit programme.

Viscount D'Avignon, vice president of the European Commission, was the driving force in getting European IT companies together to discuss collaboration. The result was that 100 representatives of 12 companies, GEC, ICL, Plessey, Siemens, AEG, Nixdorf, Thomson-CSF, CII-Honeywell Bull, CIT-Alcatel, Olivetti and STET, formulated the Esprit draft policy.

The aim of Esprit is, says D'Avignon, to enable Europe to innovate research and development and break out of the circle of "catch-up" research and development, following Japan and the US.

"We should achieve technological parity by eliminating duplication of pre-competitive research and development and by ensuring that research teams achieve the necessary critical mass to obtain results," he said.

The draft Esprit policy, which is likely to be largely incorporated into the final policy, aims to link the disparate aims and emphasises within European research. It points out that present government defence related research has shown application in the commercial sector, while industrial research



The finger points at Brussels. Will Euro Ministers be quick to approve Esprit?

aims at producing a quick return on investment.

University research is often inadequately articulated with industry's needs, and there is duplication of research due to lack of inter-European collaboration between small companies.

There are five main areas in the draft programme, and the 16 one-year pilot projects, to be announced imminently, will concentrate on these. The areas are advanced microelectronics, software technology, advanced information processing, office automation and computer integrated manufacture.

It is hoped to achieve major breakthroughs in each, and to allow the

were process. Instead of software being about labour intensive software as at present, it is intended to have capital intensive software.

This means an alternative to the present situation where the program is the solution. Instead advanced information processing systems will help choose the solution. Systems will perceive information through a wide range of sensors, relate it to knowledge already stored and create new knowledge using rules and inference.

The office automation programme will develop a multimedia interface for all office communication needs and develop off-

**A fundamental question is whether enough flexibility has been built into the programme to accommodate discoveries forcing a total reorientation of direction**

opportunity to follow up spin-offs in unexpected directions.

The advanced microelectronics project aims to break the one micron barrier for components in integrated circuits. If this can be achieved, eight times as many cells will be packed on a microchip, with an accompanying 10 times increase in speed and 10 times reduction in power consumption. Databases and CAD systems will have to be re-designed to cope with the resulting massive information handling problems.

The software technology programme is directed at establishing standardised software interfaces, to produce an automated environment, organising and co-ordinating operations in a common database for all specialist teams participating in an industrial soft-

client electronic filing systems for unstructured information (text, voice, graphics, images etc). The programme will also include examination of the cross-cultural interplay of human factors, technical possibilities, and educational, sociological and industrial consequences.

The aim of the computer integrated manufacturing project is to establish a supersystem, such as the automated factory. This will require integrated systems architecture, advanced components, real time sensor based imaging and integrated control sub-systems mounted on chips.

The Esprit programme is also likely to include a project to link all the other five areas via an effective information exchange data communications system

linking all countries.

It is expected that initial concentration in these areas will make conditions right for innovative lift-off to outflank the challenge from Japan and the US.

But apart from expressing concern over bureaucratic delays, the recent session of the European Parliament was worried about too much emphasis on sequential processes and out-dated computer designs.

And other people are sceptical. A comment from a member of a leading British software house was "I don't believe you can have successful innovation by committee." Another opinion from a Scandinavian computer manufacturer was "each company will be looking over its shoulders at the other."

A fundamental question is whether enough flexibility has been built into the programme to accommodate discoveries forcing a total re-orientation of direction. "We don't want to be in a situation comparable to being committed to designing a smaller transistor with the microchip just around the corner," said a member of the industry. "The Esprit programme guidelines stresses the need for flexibility."

The overall aims are optimistic and D'Avignon is confident that collaboration within Europe will work. "The programme could provide a competitive alternative to other sources of technology, as the Airbus has provided a competitive source of supply for airlines buying large civil jet transport aircraft."

Commitment is required from the participating companies. Those selected for the pilot projects will have to contribute 50% of

the cost, and the Community will provide the other 50%. The Commission hopes the threat from Japan will bind companies.

The sequence of activity leading up to the Esprit project started in the mid-1970s with a limited number of small scale new technology research projects from 1975-76.

In 1976 the Commission proposed a more comprehensive four-year programme, the Multiannual Informatics Programme, which

**All priorities, training and education, standards and pre-competitive research and development, must be addressed now**

was to support about 40 small scale technology transfer projects, some research, and policies to ensure standardisation and co-ordination of procurement policies.

However, in the three year gap between conception and implementation, France and Germany had implemented national support schemes and IBM had launched a new range of products. As a result, the programme, when finally approved in 1979, was severely cut back. It received around £8.3 million for the technology transfer part instead of £20 million. Many projects were, therefore, stillborn.

The Multiannual Programme is still in progress. This April it received a cash boost to see it through to 1984. A recent progress report reveals that staff shortages have hampered the work on standards, public procurement policies and other studies, but several projects, generated by the Commission, are underway.

These projects include a plan to computerise Europe's ports, a project to develop a computing system for the generation of hydrological models, and a £4 million programme to develop Ada software. Several European companies are participating in the Ada programme, including CII-Honeywell Bull, Alsys, Siemens, Olivetti Danish Datamatics Centre and Rovsing, with Camberley-based Systems Designers as a subcontractor.

Other projects include schemes to computerise customs within the Community (Caddis) and to experiment with high-speed data-transmission techniques (Stella - Satellite Transmission Experiment Linking Laboratories).

The Commission itself publicly acknowledges the failure of the Multiannual Programme to produce concrete achievements, and refers to the 1970s as a "decade of failure" for the Community's data processing policies.

The Commission attributes the failure to national and commercial rivalries: "Collaboration has been negligible, largely frustrated by national ambition and the reluctance of the major IT companies to reveal their industrial plans or research."

Industry blames the aloneness of the Community bureaucracy, and Euro MPs, led by Hermann, place most blame on the Council of Ministers for meddling with and delaying the Commission's proposals.

Related to the Multiannual Programme, but funded separately, are two programmes aimed at widening standards as well as providing easier communications within the Community, the Isis programme and Buronnet-Diane.

The Isis Programme (Institutional Integrated Services) was proposed in 1979 and is just completing a pilot phase. Isis is set up to provide information technology to link institutions of the European Community on functional, geographical, cultural and linguistic levels.

Five British companies are taking part in the pilot studies. Most of these are short, lasting about six months and worth about £30,000 each. Butler Cox is carrying out preliminary work into local area networks, Pactel is working on a

route dimension pattern, and White Wagon software consultancy is identifying the need for file storage and retrieval systems in Community offices.

Langtoo Information Services has worked on a £180,000 project to examine computerised alternatives to paper documents, and CIS (part of the Yankee Group) and Loughborough based Hunt (Human Sciences and Advanced Technology) are involved in the development of office automation feasibility studies.

The planning for the long term Isis programme, which is envisaged as a four year development phase followed by a four year consolidation phase, has been beset with budgetary problems, and although the way has recently been cleared for the next development phase, there is organisational reorganisation taking place, and it is unlikely that the project will get fully underway for another year.

Some work will continue on a low key this year and activities will include electronic mail, preparations for videoconferencing and general human and organisational studies.

Another programme organised by the European Commission was the Buronnet-Diane (Direct Information Access Network for Europe). This standardised telecommunications network was implemented three years ago to link technical databases throughout Europe. The number of online databases has risen from 70 in March 1980 to 370 today, and there are now 2,500 users.

D'Avignon took the lead in formulating a co-ordinated research strategy in Microelectronics, and the Microelectronics Programme was proposed in 1979. It took two years to gain approval, and approval was given just one month after Japan announced its fifth generation plans.

The £24 million programme has only this month got underway, with the first of the 10 or so two-three year projects being announced last week, a collaborative venture by the Science and Engineering Research Council, GEC, Philips, University College Swansea and Trinity College, Dublin.

The real test of Esprit's success initially will be the speed with which it can gain approval by the Council of Ministers, and the speed with which its budget can be agreed.

Fernand Hermann made the point last week: "It has taken many years to achieve very little at great cost. I mainly blame the Council of Ministers for the delay and changes to programmes so far, and I have drawn attention to the situation in Parliament in the hope that the Esprit project will be run more efficiently."

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April 1981



# IBM users put on a happy face

THE IBM Computer Users Association is one of the highest in the country, with 1,000 members from some of the biggest and most prestigious data processing installations.

Each year the CUA holds a large conference which usually draws attendances from up to 50% of the membership.

One object of the annual conference is to bring users together to discuss common problems.

Another objective, less clearly articulated, is to give IBM and the users a forum in which to record their attitude to each other in public.

This year, in the wake of a period which has seen the CUA become increasingly polarised against IBM over the issue of price increases, the main protagonist for the users was John Grant, chairman of the CUA Council and facing him for IBM was Anthony Cleaver, the company's number two manager in the UK. Diplomacy was the main theme of the public encounters.

Here's how they looked to Computer Weekly's Kevin Cahill.



GRANT... Private angst.

BONHOMIE was the predominant public face of the IBM Computer Users Association meeting at Luton, but behind the joviality was a private angst which was mostly about prices.

According to CUA chairman John Grant, the association had failed in its representations to either IBM to delay or recede the regular price increases it has been imposing on its users, particularly over the past few years.

This statement belied the fact that IBM has not yet installed the price increase due in February 1, but as Grant said, no one at IBM was prepared to admit that the CUA had anything to do with this.

Grant told the 450 members attending the annual conference that IBM is now aware that price is a major issue in its installations.

If it is, then Tony Cleaver, IBM's assistant general manager in the UK is not admitting it.

In his speech, which immediately followed Grant's, he managed to totally avoid the price issue, as did all other key IBM speakers.

Many CUA members present were privately highly critical of IBM's failure to deal publicly with what their chairman had identified as their principal concern.

A number of IBM users, particularly in the Midlands, are believed to have withheld payment of last year's increase and a general attitude of private opposition was strongly evident among the members.

Grant conceded that the price had at times proved difficult to handle, which was a diplomatic way of saying that there was a difficult balancing act among the more extreme of his members who wanted to openly flout IBM's increases in public, as opposed to the

Midland group who had merely done so in private, and the less extreme who simply wanted to negotiate with IBM.

While IBM has a specific manager who liaises with the CUA, the relationship between the company and its users is increasingly conducted, certainly at a policy level, by Anthony Cleaver.

This made Cleaver's avoidance of the issue in public, and to a measured extent in private, a matter of concern to most of the attendees.

Cleaver's attitude, which was excused on the grounds that the Press was present, also tended to undermine Grant's claim that the CUA is a strong association.

Where the association has had some response, and where Cleaver was prepared to talk, was on the issue of IBM's billing.

Because of the huge range of products, agreements and pricing positions, an IBM monthly invoice for a large installation can look like a small book.

In response to persistent approaches from the CUA, IBM has accepted a member of the CUA council on to its internal working party, which is looking into the whole question of the way the company bills its customers.

Grant reported that IBM had further extended co-operation on this issue by sending their senior managers to the CUA council to report on progress to date.

While the CUA's man on the working party, Ray Sanders, somewhat gloomily thought that the whole billing system (which is being reviewed by IBM at corporate level) would take several years to overhaul, some changes have already been made by IBM.

The company has dropped its billing of delivery charges as a



CLEAVER... Managed to avoid the price issue.

separate item for each piece of equipment purchased and volume purchase agreements have been standardised.

The maintenance issue is based on the fact that, like a piece of hardware, a piece of software should work when installed.

Initial fixes, especially if they have to be made as a result of shortcomings in the software itself, should be paid for and done by IBM, according to the CUA. Grant was able to confirm some users' worst fears that IBM was giving 3081 users priority for 3380 deliveries.

Although the delivery position on the huge 3380 discs is now much easier than earlier this year, many users are still experiencing six or eight week delays.

Cleaver dropped a number of hints about IBM's future direction as a company.

To a background of the disappearance of almost all delivery delays as IBM brings on stream more and more of the 25 million square feet of new production facilities created over the past few years.

Cleaver told his audience that IBM's goal was to become the low cost developer of the highest quality products in the industry. He added that having achieved that goal IBM also intended to become the low cost developer, seller, and servicer to the DP community.

In private, Cleaver pointed to IBM's willingness to negotiate on price, something that IBM had rarely done in the past.

One item revealed by IBM for the first time was the outcome of its internal survey of customer satisfaction levels.

According to Cleaver, the overall customer satisfaction levels rose from 60% at the start of 1981 to a high of 84% at the end of 1982.

## Govt plugs for office automation 'ineffective'

by John Kavanagh  
GOVERNMENT SWITZERNESS campaigns on office automation are having a "disappointing" impact - but despite this UK firms are starting to get their automation strategies together.

This conclusion emerges from a report\* on the electronic office from the independent research body the Policy Studies Institute. But the report also shows that companies are still sceptical about the benefits even of word processors and are sticking with typewriters.

The study reports say only one in three of the companies surveyed were aware of the Department of Industry's office automation promotion campaign, which involves full funding of projects across the country. This is "somewhat disappointing", says the report, as the companies, all keen to have some computerised office automation, would be expected to be better informed than most.

The government's Information Technology Year in 1982 made even less impact. Its aim was to increase public awareness of information technology. Yet only 6% of the sample said IT82 had made a significant impact on them and less than a third said it had a minimal impact. Almost 60% said it had made no impact at all - and many said they had not even heard of the campaign.

However, two-thirds of the companies were using word processors. A third were buying another third saw them as the first step towards complete office automation systems. The rest were evaluating the effect of their first word processors before deciding whether to go for integrated electronic office systems.

But among firms not using word processors a quarter were not convinced of the benefits and another quarter said they were too expensive. A third said typewriters were adequate and their work was not suitable for word processing.

Even among the word processor users there was dissatisfaction with suppliers. Nearly 60% said suppliers were not doing enough to meet users' needs. The same number said training was too poor.

Even so word processors were welcomed by 83% of managers and 74% of typists.

The Electronic Office Progress and Problems 92p. P.S.I. Policy Studies Institute, 1 Castle Lane, London SW16 6DR.

"We will never now compete with Japan in the next computer generation," he said. Dr Hunt said that he had much earlier advised ICL to get out of the big mainframe area and get into the Vax market place.

To some extent ICL has done this with the ME29, but the handling for a mainframe position continues with the marketing right at the top end of the mainframe business of the Fujitsu 380 known as the Atlas 10.

"At the moment Alpha Micro users are very much a club," says director of sales Barry Dearborn, "and clubs just won't survive. People are looking to see a presence in the market place. The new moves show a commitment to the market."

Another means to get away from the club atmosphere and be seen to be active is through licensing deals with Alpha Micro's proprietary multi-user operating system, AMOS. Major manufacturers of 68000-based machines will be taking out third party licences to implement AMOS on their machines, says Dearborn.

AMOS grew out of DEC's PDP-10 operating system. Dearborn adds, and is very space-efficient, taking only 48K of memory.

The UK operation has been established in Slough mainly to keep closer contact with the UK dealers and customers.

Advertisements placed by CAP Associates, Croydon based recruitment consultants, were given certificates of merit in three categories. CAP has no association with CAP (Computer Analysis and Programming), a statement made recently made in last week's issue.

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## SOFTWARE FILE

# Experts ask how to communicate

SYSTEMS experts met last week at an elegantly-restored medieval priory to talk about the office of the future.

The best brains of the country's computer departments are now turning their attention away from the questions of "which machine?" and "what programs?" to "how do we communicate with each other?"

And a group of them, representing 33 large organisations, went to a meeting for users of the American product HOST, held by its British distributor Shubrooks.

Set up eight years ago by ex-Univac analyst/programmers Paul Shubrook and Geoff Knott, this software house moved in 1980 from Windsor to Almersley at Lyne, near Chertsey in Surrey.

Although Shubrook was attracted to the place both as a property investment and as a pleasant haven for technical staff, his thoughts were directed to the future, rather than the past. He sought a product that would offer more than IBM's PROFS and found one written by Jay Chang,

of National Business Systems, Connecticut.

An electronic engineer who worked for RCA and Univac, Chang went into business with a team of seven in 1980 to promote HOST. Since then he has generated a turnover of \$250,000 from nine US customers and is negotiating distributorships in various parts of the world.

First UK site was the GLC a year ago, which has aroused the interest of many other potential clients. GLC staff used to make 300 internal phone calls a day - now they send 500 electronic notes. A council office was said to save one man-hour a day just through better diary management.

Among those at the evaluation stage are Cadbury Schweppes, Babcock Power, BASF, Canon, GEC, Tesco, ICI and a number of local authorities and public sector bodies.

Peter Monk, technical strategy consultant for Commercial Union Assurance, spoke of the need for evolution, not revolution. CU has 50 registered users on its IBM 3081 running with CICS under MVS.

"We don't understand all the ramifications ourselves, so we can't expect the users to," he said. He saw HOST as a way of replacing tedious train journeys with electronic meetings.

Commercial Union, with a head office about to be decentralised around the south of England and about 30 branches nationwide, sees a pressing need to commit itself to an office support system, even though the benefits may be at present unquantifiable.

Canon has 125 users on its IBM 4341-based HOST and chose it in preference to Canon's own FAX system for some jobs.

Paul Dawkins, project controller for GEC Telecommunications, said they were testing HOST on an IBM 3081. They too were reacting to internal pressures to create an electronic office.

"None of us in the computer department had a very clear idea of what was involved. We wanted a suitable product in quickly to give us hands-on experience" HOST had been "very intelligently thought-out," he said.

## Mumps and Unix combine

A PORTABLE version of the Mumps high-level language that will run concurrently with the Unix operating system is to be demonstrated in San Francisco at the end of May.

The combination of Mumps, which was developed for medical applications, and the multi-user operation system, has been created by Microtenics Design Corporation of Washington.

The US Mumps user group will be the first to see it in action. It is expected to be brought to the country in the third quarter of the year by Computer Design Systems of Manchester, which has negotiated the European marketing rights.

The system supports a new portable version of Mumps written in C language and is to be demonstrated in conjunction with the Unix system.

market on its Professional machine. A design by Structured Data Systems replaces DEC's own single-user POS operating system in a multi-terminal system with a word processing application overlaid.

It was demonstrated to a recent UK user group meeting, attended by about 100 people, including representatives of many major companies. Shared Medical Systems Europe, is engaged on work to link micro and minis in the medical field.

Southwest Technical Products of Peterborough is promoting a micro system for around £10,000 which it claims to be equal in speed to a DEC PDP11/34 version for between £30,000 and £40,000.

Among others who are known to be aboard the Mumps badwagon are ACT, H&RD of Birmingham and British Medical Data Systems.

## Micro Scope expands its caring side

by Nuala Moran  
MAIDENHEAD systems builder Micro Scope has launched a micro-based administration system for nursing homes.

Known as Micro Care, the system runs on the PSI-80 computer from Kontron, a Hoffman Roche subsidiary. The cost of the system is £4,500, but it can also be leased for £360 a quarter over three years.

Micro Care covers all aspects of running a home from patient care to financial analysis. It includes patient records, drug lists, accounts, staff records and payroll.

The system, designed for use by people without computer experience, was developed in collaboration with Brian Jupp who runs the 40-bed Brimmar nursing home in Worthing.

He has been using Micro Care for eight months. He says it saves him a week in administration time and has cut the account bill by 50%.

Paperwork has also been cut down for nursing staff. For example, the system provides a print-out of each of four daily drug rounds. If the drug regime is changed it is easy for the



JUPP... Says systems saves time.

senior nurse to amend the data and get a new print-out.

"It is all necessary by law to keep a written record but the system is cleaner because there are fewer crossings-out."

"This time saving on paper work has freed the nurses to get back to the bedside," said Jupp.

A specialist health care systems division, Micro Scope Medical, has been formed within Micro Scope to develop and market

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JOICE... Keeps his job as managing director.

## Altego Ireland stays the same

AS the dust settled this week over the defunct Altego empire, Cord Investments said it intended to go on running the Irish subsidiary as if nothing had ever happened to its parent.

Niall Duggan, director of Cord Investments, which has taken a 60% controlling interest in Altego Ireland Ltd, said: "This company has never been in receivership, has been quite profitable and so we don't think any changes are warranted here."

The firm will retain David Joyce as managing director. The other 40% of its shares are still held by Altego Ireland directors, believed to include Dick Jones and Raj Thomas.

It is planned that Cord will have two or three seats on the reconstructed board, but talks on who does what are still going on. Cord Investments, parent of Cord Designs in Staines, has ensured jobs for some 70 former Altego employees.

Duggan said Altego Ireland, which would continue to run under its old name, had been attractive to them mainly for its Middle East connections and its training facilities. The firm has a £1.25m contract for the United Arab Shipping Company.

Altego's old sales headquarters has now been shut down by the receivers, Ipe Jacob and Maurice Wilhall, of chartered accountants Thornton Baker.

Cord Designs bought real time technical systems house Zeiss Hermes from the Enterprise Systems Group in February. Enterprise, which had owned it for less than a year, decided it did not have the resources to develop the company adequately.

The group of Altego Business Systems men who left to set up their own firm Bluebird Software, are now marketing an IBM System-34 based application developed by PCR of Chicago, the Easyplan-11 modelling system.

## IBM aid comes to market

PRUEMAN, the Tone Software Corporation's aid for the IBM Command List (CLIST) compiler is to be marketed by the European Software Company (ESC).

CLIST's performance has been criticised by IBM users working in the TSO environment and some sites are said to have banned it altogether because of its heavy demand on resources.

ESC, an arm of Boole and Babbage, thinks that Prueman is the answer to the problem.

## Sick system

MICROSSP, Computer Management Group's statutory sick pay system, is to be marketed by the local authorities management services and computer committee LAMSAC.

Under a new agreement LAMSAC has acquired the rights to sell the system, based on ICL's personal computer and its DRS-20, to more than 500 local government bodies.

MicroSSP runs independently but can be linked to payroll and personnel systems on ICL or IBM miniframes.

## Finance forum

A SECOND finance forum for software houses is to be held in Manchester on May 26, following the success of the one in London in January.

Organised by the Computing Services Association, it will take place at the Piccadilly Hotel. Chairman of the Software Products Scheme advisory committee Brian Cuddy said there would be about 14 banking companies there.

At the London event 135 software firms were represented, in search of sums from £50,000 to £400,000.

## Euro network

DATALOG Management Systems, the Hampshire software house, is setting up a European dealer network for its Data Processing System (DPS) for Burroughs users.

Datalog now has 36 users worldwide. David Wilk, the company's managing director, is predicting a 200% increase in turnover for 1983 from £750,000 to £2,250,000.

## Win an Osborne

ASHTON-TATE, US developer of the successful database management system dBase II, is in kind a competition for the best applied graphics available to run on its software. Three prizes: Osborne portables, for the most sold up to March 1983, the highest commercial potential and the most novel application.

## Customers line up for a conversation-stopper

"IT is," the man from IBM said, "the end of conversation as we know it." Being the good marketing company that it is, IBM made the CUA conference the scene of a series of detailed presentations about its most exciting products, of which ADS, a voice-based filing system, is one.

ADS digitises voice input from a telephone, stores the voice messages on disc and puts the recall and distribution of the voice input under the control of some very sophisticated software.

Its not cheap, although there are a queue of customers who have been lining up since the initial announcement last year to acquire the product. First in the queue is IBM itself which has adapted ADS for 4,000 of its own staff within the company.

The system is based on a Series 1 computer which can have up to 1,000 telephone lines and from two to eight 64K discs attached. ADS

currently assumes that you have an IBM PABX 1750 or 3750. Entry level price is from £125,000 per annum.

Tan Stoker, the IBM manager for ADS explained that the company, despite its size, had been unable to create enough interfaces for the myriad of European manufacturers in time for the launch. These would be available in due course, Stoker said.

ADS has a massive range of detailed functions operated from a small calculator sized keypad which comes complete with audio coupler.

A caller can store, recall, check and amend calls, all in voice mode. Calls can be set up in advance and scheduled for dispatch to selected recipients.

A user can call in and check the status of calls which should have been dispatched to see whether they have been sent and then received by the sender.

## Video-based storage on the way from Marconi

MARCONI will shortly announce a video tape-based data storage system developed in conjunction with Professor Gareth Hunt of Imperial College. Dr Hunt, a DEC user, explained to the IBM CUA conference that his team at Imperial College had developed the image storage system as part of the NASA space programme.

The Imperial College Group, based in the Department of Atmospheric Sciences, acted as the collectors of the data being transmitted back by the Mariner space craft. The data arrived on earth at a rate of about 118 Kbytes per second, and contained up to 70 images in each second's transmission.

The raw image data was stored on video discs, but the huge volumes of data transmitted back to earth over the past three years by the space craft were stored for convenience on video tape.

But most of the processing of the data is carried out by the black box designed by Dr Hunt's team.

It is this black box, attachable to more or less any video tape system, which Marconi will be marketing.

At the end of his presentation, Dr Hunt expressed himself deeply disappointed with the new-blood lectureships just created by the government. He noted that none of the lectureships were in basic physics or VLSI, two key areas in the Japanese fifth generation project.

"We will never now compete with Japan in the next computer generation," he said. Dr Hunt said that he had much earlier advised ICL to get out of the big mainframe area and get into the Vax market place.

To some extent ICL has done this with the ME29, but the handling for a mainframe position continues with the marketing right at the top end of the mainframe business of the Fujitsu 380 known as the Atlas 10.

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## New look for Alpha Micro

by Robert Parry  
US MICRO manufacturer Alpha Micro is out to change its image. It has opened up its own UK subsidiary, Alpha Microsystems (Great Britain), to beef up its presence in the UK market, and is gearing up to put a new face on its multi-user micro product line.

The machines will be redesigned, with continuity maintained, and given catchy names rather than the present numbers. The company is also planning to move away from being just a supplier of processors; it is branching out into peripherals and more application oriented systems for word processing, spreadsheets and CP/M users.

"At the moment Alpha Micro users are very much a club," says director of sales Barry Dearborn, "and clubs just won't survive. People are looking to see a presence in the market place. The new moves show a commitment to the market."

Another means to get away from the club atmosphere and be seen to be active is through licensing deals with Alpha Micro's proprietary multi-user operating system, AMOS. Major manufacturers of 68000-based machines will be taking out third party licences to implement AMOS on their machines, says Dearborn.

AMOS grew out of DEC's PDP-10 operating system. Dearborn adds, and is very space-efficient, taking only 48K of memory.

The UK operation has been established in Slough mainly to keep closer contact with the UK dealers and customers.

Advertisements placed by CAP Associates, Croydon based recruitment consultants, were given certificates of merit in three categories. CAP has no association with CAP (Computer Analysis and Programming), a statement made recently made in last week's issue.

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## Inmos gets no-strike deal with union

by John Kavanagh  
INMOS has assured itself of trouble-free industrial relations by signing a sole recognition agreement with the moderate BETPU electronics union. Whatever the state-owned electronics firm's financial problems it will not be hit by strikes, go-slows or any other industrial action.

The agreement covers about 70% of the 250 staff at Inmos' factory in Newport, South Wales. It was signed at top management level by managing director Dr Iain Barron and Eric Hammond, who has been elected to take over



# MARK WEINBERG'S SUNDAY TIMES

By the time he was thirty, Mark Weinberg had created Abbey Life. Today, as the founder of Hambro Life, he has been responsible for revolutionising life assurance in this country.



After a highly organised week in town, we have a completely unstructured Sunday. It's a day for sleeping late and messing around on our farm. I like to

get a couple of sets of tennis and some riding in if I can but mostly I just potter around and take the opportunity to spend an hour or two with the children, of whom I don't see enough during the week.

Our farm is managed by a neighbouring farmer so I always have a chat with him in the morning discussing how things are going and I also spend some time with Edgar who looks after the vegetable garden and our wild ducks. He loves the country and has never lived more than a mile from his present home, so it's nice to have half an hour with him, seeing the countryside through his eyes.

But the day starts with the papers. We get up fairly late so one of the disadvantages of living in the country – not getting the papers delivered till 9.30 – doesn't really bother us. We're unlikely to be up by then, and we lie in bed reading them for about 45 minutes.

The beauty of Sunday is the chance to get heavily into the papers and catch up on what one missed in the week. On weekdays there's a certain amount of reading I have to get done each day and after that I read the papers more or less according to chance. But Sunday I can pay much more attention to them, reading the news and features in greater depth and also devoting time to the arts and leisure sections.

With The Sunday Times I start with page one and then turn straight to the business section – even on Sunday it's a bit of an obsession. Then I try to go from page two through to the centre spread fairly fast, picking out stories I particularly want to read before I get distracted. But the little news features

before the centre spread always seem to pull me in and thwart my attempt to get an overview. There's always a couple on science or medicine that I find especially interesting.

The thing I like about the centre spread is the way the main issue of the week is developed in different ways, partly in the leader, partly in the article on the opposing page and sometimes in another comment piece as well. It seems to pull it all together somehow.

We don't go out on a Sunday but we quite regularly have people round for lunch, which is seldom before 1.45 and often as late as 2.15. I usually manage to snatch another 15 minutes' reading time just before lunch.

One of our other interests on the farm is our wild ducks which live round a bit of water near the house. We've wired in the area against foxes and in the last couple of years I have been trying to introduce a wider variety of fowl. We've got about 25 types now and have succeeded in breeding from a number of them.

I tend to treat the main newspaper and the business section as a separate paper from the rest. I'll pick up the review and colour supplement after lunch or settle back with them in the late afternoon or evening. I often read the main piece in the review in a concentrated session in the evening.

I very much enjoy the supplement and think it contributes a lot to Sunday. I appreciate the quality of photography which is a great contrast to the nasty, flimsy feel of the traditional American colour supplement.

I must be an advertising manager's dream as I also have a soft spot for the ads and read the supplement as much for them as for the editorial. This makes me a menace as far as my secretary is concerned because I'm likely to come into the office on a Monday morning with three or

four coupons I've cut out and ask her to send off for the products.

On Sunday evening I start to change gear, worrying about the week ahead and thinking that if I don't organise for Monday morning I'll be in a mess.

There's really no chance that I'll have read everything I wanted to read in The Sunday Times so I keep it for the rest of the week – the trouble is that the next Sunday usually arrives before I've finished it.

In a recent survey by the New Business Research Consortium, several interesting facts emerged:

◆ The Sunday Times is read by more businessmen than any other newspaper.

◆ The Sunday Times is the only quality Sunday to have increased its businessmen's readership since 1980.

◆ The Sunday Times has market leadership in most of the important occupational areas, including: marketing, 43.5%; computing, 32.5%; finance and accounting, 38.5%.

◆ The Sunday Times has more readers in all the following categories: top income bracket, 51%; 2-car families, 36%; credit card ownership, 35%; value of shares £10,000+, 53%.

Almost every indicator showed The Sunday Times to be the top paper for business men and women.

For more information about display advertising, phone Mike Ruda, Advertisement Director, Times

SUNDAY TIMES MAGAZINE Newspapers 01-837 1234.



More businessmen read The Sunday Times than any other newspaper.

**THE SUNDAY TIMES**







## PROFILE



HAUER... "People demand to know more and more."

## Visionary who thought programs had value

HALF of the computer systems sold in 1990 will be supplied by value-added dealers, according to Informatics chairman Dr Walter Bauer.

"Value-added dealers" is his way of combining software houses and systems houses which enhance hardware and give the customer what he wants.

"More and more machine manufacturers are going to sell their machines in people like us. They aren't going to need those big sales forces to visit the users any more. It's we who are going to need the sales people," says Bauer. Bauer is considered within his California company and beyond as one of the industry's visionaries. His claim to this title rests on having founded a software company in 1962 when there were only two or three others in existence.

He had to persuade the world that programs had an economic value in themselves - and many people thought he was crazy.

But he had been in computing since it began, and was sure he was right. In the early Fifties, when he was a research engineer, there were only five computers in the world. One he worked on at that

time was the MIDAC in his native Michigan - "they said it stood for 'Machine Is Down Almost Continuously'".

The first machines he worked on were pretty vast - but about a thousand times less powerful than the IBM Personal Computer he now keeps at his bedside. Most of the work was in machine code as there were still no compilers for high level languages.

He gained his business management experience at the Ramo Woodbridge corporation, suppliers to the American defence department. From Ramo, Richard Hill and Werner Frank went with him to set up Informatics.

by George Black

"The others that already existed, such as Computer Sciences, were offering professional services. Our idea was quite different and new. It was to sell products. People doubted whether this could be done because they thought there could not possibly be any common denominator between one computer user and another. We showed them wrong."

"I'm aware that men are mortal and I must retire sometime, but I have no plans to do so."

"Why not? Because I am still enjoying it. And because computer services are still really in their very early days."

## DOWNTIME

### Who's been cribbing?

SPOT the April fool story this year then? Doubt it, unless you've been looking in my top right hand drawer. One of our funsters put together a spoof about ICL developing the 3900 series, which features input and output by thought waves.

But being a sensible publication, we didn't actually print it.

Imagine then our surprise when we discovered, only three weeks later, that a learned professor from the University of California was promoting just such an idea at a conference in Bristol.

Perhaps the professor had been rooting around in my top right hand drawer.

## 10 YEARS AGO

FROM COMPUTER WEEKLY OF MAY 3, 1973: Access to expertise which had gone into development of the ARPANET would be available to Europe following an agreement between Logica and its European associates BESA, with Doli, Baranek and Newman. ICL chief Geoffrey Cross announced that the 2903 small business system would spearhead ICL's attack on the European market.

## PLATFORM

## Competition—the catalyst in good communications

COMMUNICATIONS technology is changing so rapidly that many nations may find it advantageous to liberalise supply policies to provide their citizens with the newest equipment and services.

As technologies continue to converge, as did computers and telecommunications in the recent past, there will be benefits to opening borders to competition. The alternative would be to increase monopoly coverage each time a new development, such as cellular radio or packet switching, appears. This would be a costly approach.

Because of this, some nations might find it worthwhile to follow the leads of the US in deregulating its telecommunications industry and of the UK in liberalising its equipment supply.

There is much interest throughout the world in the American deregulation process. We perceive this interest among the numerous visitors from other countries who come to our manufacturing facilities and telephone companies each year.

Almost all of them have a lively interest in deregulation. Since we believe in competition in communications, we take this interest as an encouraging sign.

No wonder there is interest. Look, for example, at what is happening just in the demand for the telephone itself. In the US, it is predicted that sales of telephones will soon replace stereos, home computers and video-cassette recorders as the fastest growing consumer electronic product.

There are forecasts that new phone sales will reach 10 million this year, more than double the 1982 figure.

Many people are fascinated by the deregulation of the US telecommunications industry because they believe it was an overnight phenomenon. But it was not, and that is important to remember.

The second thing to be aware of is that, to a great extent, technological advancements helped bring about deregulation.

It is ironic that what is consid-

ered the first, hesitant step taken on the road to deregulation in the US involved the use of a very unsophisticated non-electric device called the Hush-A-Phone. This simple gadget was attached to the mouthpiece of a telephone to allow its users to speak into the instrument more privately.

The 1956 decision by the Federal Communications Commission to permit the use of a Hush-A-Phone marked the first time that a non-telephone device had been approved for attachment to telephone company equipment.

A quarter of a century elapsed between the Hush-A-Phone ruling in 1956 and the settlement of the Justice Department's anti-trust suit against AT&T in 1982. What happened between those two events was a steady flow of

Theodore F. Brophy is chairman and chief executive of GTE Corporation

liberalising decisions by the FCC and the courts, most of which involved the use of new customer products or services.

All this took a very long time. Deregulation was not born overnight. It took hearings and court suits and debates and much soul-searching. And I hope that what we went through will be studied, and that this will shorten the process elsewhere.

Will the majority of the world's nations choose to go the way the US has?

I hope they do. For I fear that if they don't many countries will be unable adequately to supply their citizens with state-of-the-art telecommunications services and products.

That is because the world of communications has changed drastically and permanently. Throughout most of the history of telephony, technology moved at a slow, steady pace, but nothing occurred which basically altered the way we communicated.

Then, as telephony's first century was drawing to a close, there was an explosion of developments.

New technologies, new systems and new techniques began pouring out of research and development facilities. Satellite communications, solid-state electronics, electronic switching, optical transmission, integrated circuits, digital technology, and, later, packet switching.

In the future, changes will come faster and cost more. Research and development expenditures are skyrocketing. We at GTE have 3,000 scientists and engineers working on company-sponsored research and development projects. In 1983 our research budget will be in the hundreds of millions of dollars and most of this will be devoted to technology.

The proliferation of commu-

nications technology, products and systems will proceed at an accelerated pace for as far as we can see into the future. Information-based societies around the globe will demand what is current, what is best. In countries that traditionally have had problems in supplying their citizens with adequate communications, competition can be the catalyst in providing these services on a cost-efficient basis.

I know liberalisation will not come quickly. But there are some hopeful signs around the world, in such places as Canada, Australia and Ireland.

And competition has been the subject of an encouraging report issued last year by the International Chamber of Commerce.

None of this, admittedly, has brought about any widespread action. But at least the subject is being discussed and it will continue to be discussed.

Liberalisation will be a dominant factor in communications during the rest of this decade.

Theodore F. Brophy

## McNulty is back

WITH the slogan "Mac is back", John McNulty, a leading telecommunications entrepreneur notorious for his publicity stunts and sustained campaigns against British Telecom's monopoly has announced new company plans and product line at the Computer Trade Show.

McNulty modestly proclaimed: "The new company will do for communications what Sinclair did for computers. The next and bigger boom area after microcomputers is communications. Our first product will link these two exploding markets."

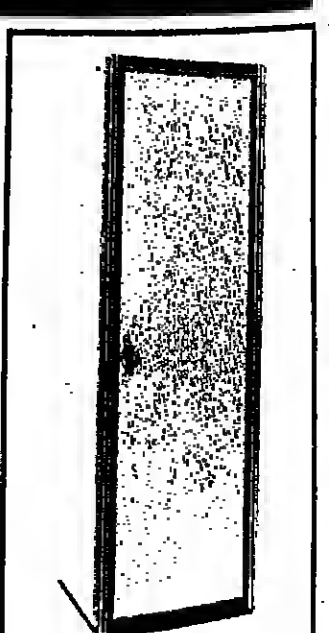
McNulty's Interchange, as the new company will be known, is to bring out a modem operating at 300 bits a second at a price of £50.

According to McNulty, ordinarily "low cost" modems have been in excess of £200.

The modem will comply with British Telecom requirements for approval, and McNulty has declared himself ready for battle with BT if it should obstruct his application for approval.

McNulty has taken on board someone to keep an eye on the finances, Margaret Clerk, a qualified management accountant who joined as financial director from Data Efficiency.

"Having helped one millionaire make it, Data Efficiency's Mike Brewer with the Apple dealership, the second one should be easier," McNulty also spoke on "Selling yourself."



## Puzzle corner

PUZZLE time again. Study this photograph of a new product then answer the following easy questions:

1. What is it?
2. Which way up should it be?
3. What is inside?
4. How the hell do you take an interesting photograph of it?

Chad

## ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 SAS

Thursday, May 5, 1983

## Half an Alvey is better than none

THE Alvey Committee recommendations for an advanced information technology programme have at last been accepted. And if in the end the government slightly hedged its bets, there is now at least a framework to build upon.

The most serious immediate concern is that there is apparently no new money. The £200 million governmental contribution will come from existing allocations, which leaves one with the suspicion that it is a case of robbing Peter to pay Paul.

We shall need to look closely at how the funding works in practice.

But at least we are in with a chance against the Japanese, the Americans and the French.

And we welcome, too, the choice of Brian Oakley of the Science and Engineering Research Council as top man in the project's directorate. He is well-respected in the industry and deserves every support in making the scheme a success.

We hope that those he invites to participate in its direction will respond to the challenge, and put national loyalty above company loyalty - or at least on a par with it.

They should not hang back and wait until after the next general election before committing themselves. It is unlikely that the next administration, whatever colour it may be made of, will have such radically different views on information technology to reverse or divert the course of the Alvey programme.

There are few who doubt that we have the brains in this country to compete successfully in the international high-technology arena. The doubts surround our financial, managerial and selling skills.

Oakley's massive task will be to orchestrate these and allay the fears expressed both by Alvey's team and by industry leaders since the report was published that laboratory triumphs may never reach the marketplace.

Oakley, starting with one hand tied behind his back, deserves our sympathy. The 50% support limit will, as he himself has pointed out, make the struggle to win the commitment of smaller firms more difficult.

The government's decision to restrict its backing in this way was wrong, and the reasons it gave for doing so were altogether unconvincing.

The argument that heavily subsidised schemes necessarily mean a lack of industrial commitment is no more than a doctrinaire generalisation.

It is to be hoped that the government - or its successor - will not now sit back and claim that it has fulfilled all its obligations to the future of computing.

It should stand ready to modify the plan in any way that Oakley and his colleagues suggest - particularly if it turns out that the response from the smaller, but vital software houses is inadequate.

The whole object of the exercise will be thwarted if there is not unity of purpose and a sensible division of labour with a common goal.

The Cabinet should be flexible enough to go back on its initial stance and increase the grants to 90% if that becomes essential. The question is too important to be decided by a once-for-all, "no U-turns" policy.

Industry secretary Patrick Jenkin did state that the directors of the Alvey programme could ask for additional grants to fund new developments. We trust the government will stand by this.

The facts of the case are still that the Japanese, Americans and French are spending far more than we are in this area and that their programmes are far more tightly and centrally directed.

It is time British governments began to look ahead more than the next 12 months and think of their children's careers as well as their own.

But we must go into the Alvey programme optimistically. Fetch that we can do it is half the battle. And we owe thanks to Kenneth Baker and Patrick Jenkin for battling on the industry's behalf, even if they did not quite get all we needed.

## 1984 and all that...

THIS week's example of the strange things people say about computers was sent in by Melvyn Booker of Reading, Berks, who writes: "It is now possible to prove that a computer program meets its specification."

New Scientist

## LETTERS

## Lesson of Altergo

WHILE it is very easy to be sympathetic with the staff of Altergo in their plight of potential unemployment, it is very annoying to companies such as mine, and I am sure to other successful software organisations, to read in some sectors of the Press references to Altergo being "the UK's leading IBM-based software house" and "one of the UK's most successful software houses".

The fact is that at the end of the day Altergo was a badly managed business.

The main qualifications that customers of such organisations look for are quality of product and a reasonable guarantee of level and continuity of service, these depend very much on the price charged for them, the corollary being that charging less than the correct price leads to the products and services disappearing.

I am pleased to say that CMG is not noted for being inexpensive; we also have a considerable base of IBM customers and believe that we will have the largest number of entries this year in the famous IBM "Red Book" of non-IBM software. Most importantly we consistently make money.

Let us all, customers and suppliers alike, learn the lesson of Altergo.

R. J. WHITE  
Director

CMG  
Croydon.

## Software fortunes

YOUR article, "Staff quit Software AG" (Computer Weekly, April 21) leaves the impression that Software AG of Darmstadt, West Germany, and Adabas Software Limited of Derby are under the control of Software AG of North America (of Reston, Virginia), and therefore reflect its financial fortunes.

This is not the case. Adabas Software Limited is a subsidiary of Software AG (Darmstadt), and both these companies make substantial profits. ASL, in fact, has doubled its staff and customer base in the last three years, has established its own fully-equipped computer centre and training centre, and is still expanding. Incidentally, Derby staff currently number two dozen rather than one dozen and British installations now number more than 50, many of them "household names". ASL is also increasingly called upon to contribute to the continuing development of products such as the high level language Natural - which, like the Adabas database system, is a European product of West German origin.

M. F. HOLLIS  
Company Secretary  
Adabas Software Ltd  
Derby.

Useless

AS the owner of one of the arguably best microcomputers available today, Acorn's BBC Model B, I am compelled to comment on J. P. Bennett's letter (Computer Weekly, April 14), regarding Forth.

I have purchased the Acornsoft Forth system for three reasons. The first is that Forth meets most of my requirements for a high level language compiler to complement the Assembler; the second is that there is presently no alternative (whereas Pascal goes); and last, but not least, all the Acornsoft software I have seen to date has been of a uniformly high standard.

Unfortunately I cannot use the system because the "accompanying book" has not yet been published. When last I spoke to Acornsoft on the telephone I was informed that it might be available by June. In the meantime I am left with a useless cassette and Acorn is left with my money in its bank account.

P. HILLIER-BROOK  
Workingham, Berks.

## Computer brainwave

WITH reference to the item (Computer Weekly, April 21), reporting the suggestion by a US commentator that one day soon direct brain-wave input to computers will be possible, those readers who (fondly) remember *Computer Design* may just recall my letter of July 11 1974 to that iconoclastic organ in which I mentioned in passing "direct neural plug-compatibility...", a phrase which I have favoured ever since for this (still not quite here) facility...

The full text of that earlier letter, incidentally, may bear repetition today: "A new word has just struck me: with the increasing trend towards microprogrammability, hard-wired software should become as flexible as the more usual sort. Every software writer will one day pass his 'program' on to a punch girl sitting at her program burner if he hasn't already got direct neural plug-compatibility by then! I thus propose SOFTWARE - if it hasn't been thought of already..."

Dr STEPHEN CASTELL  
Computer and Systems  
Telecommunications  
Witham, Essex.



HANOVER... "The most important of trade fairs".

## UK's Hanover apathy

WE read with interest your editorial (Computer Weekly, April 21), regarding the poor attendance of UK companies at Hanover Fair.

The failure of a great number of British computer companies to be at that most important of trade fairs must point to the lack of interest in setting up and doing business outside the UK itself. Indeed, generating enthusiasm and orders at Hanover could create problems of delivery and subsequent service needs where there is no presence in Continental Europe.

Though not denying the success of many British companies "abroad", there would still seem to be a reluctance to attack overseas markets. Language may be a problem

though you do not have to be an IBM to recognise the need for local management who speak the language of any particular country. Even here, in the Netherlands, where nearly everyone speaks English, they prefer to do business and receive documentation in Dutch.

Finally, it may not be the total lack of desire to exhibit or sell outside Britain but a lack of knowledge (market and organisational), aggressiveness and commitment to succeed. Commitment is what is needed above all.

SIMON LEVER  
Partner  
Recruitment Partners  
Gravenhage  
Holland.

## Payment for IDMS

IS it not time that the services sector within data processing and information technology reminded itself that, if we are to be accepted as a professional body of people, we must act like one.

I refer specifically to your article "Will not Reject" (Computer Weekly, April 21) where straightforward reporting of facts seems to have given way to fantasy, as instanced by the statement "Midast-29 users obtain their data based manager IDMS free".

The fact is that parts of IDMS which have been embedded into the product is free; anyone wishing to use IDMS generally will, however, have to purchase it like any other user.

I leave it to ICL to comment on Systemsolve's "insight" as reported, but I would like to correct the impressions given with regard

to Ordermaster, the order processing package that Pentagon Business systems now markets. Ordermaster/Autras was designed for and is successfully running on ME29, 2900 and D900 mainframes under TME and DME operating systems.

The reason ICL devolved Ordermaster was as part of the same product rationalisation plans that gave Systemsolve its package.

Finally, if Systemsolve wishes to make public a comparison between Ordermaster, its support services and Midas, we would welcome an independent evaluation and are happy now to agree to your publishing the results of such an evaluation.

C. E. CUSHNIE  
Managing director  
Pentagon  
London NW1.

## Esperanto for Europe

IN your article, "The trouble with working in a messy language" (Computer Weekly, April 21) Joe Celko makes the point that "the only totally regular language is Esperanto. It is the only language that is easy to implement on a computer."

The Esperanto Centre in London has recently published a report, "Esperanto and Machine Translation", written by Ian Kelly, who is (or was) chairman of the British Computer Society's Natural Language Translation Group.

And Danish electronics company Christian Tøvsing and a DSO, have won a major development contract from the Commission for the European Communities which may ease the Community's £55 million per year language problem.

The system will translate to and from eight Community languages, using Esperanto as the intermediary, ie each language will be translated first into Esperanto.

GRAHAME LEON-SMITH  
Honorary president  
Esperanto Association of Britain  
London W11.

## Full marks

WELL done Computer Weekly for giving some prominence to the achievements of optical mark readers in William Brown's piece on computerised examination results (April 14). One scene of the technique's capacity for high volume, high peak data entry is the rapidly expanding overseas education sector, in such regions as West Africa.

The West African Examination Council, which uses three of our OMR systems, processes no less than seven million examination papers in the space of a few months.

RAOUL WYNN  
Commercial director  
Data and Research Services  
Milton Keynes.

Popular systems

IN an article, "IBM sets out its Personal policy" (Computer Weekly, January 28), there is a misleading statement regarding the popularity of the available operating systems.

An independent survey has shown that 96.3% of all 8088 and 8086-based computers run the MS-DOS operating system (called DOS by IBM) while slightly under 3% run the CP/M-86 operating system. Current estimates indicate that there are approximately 400,000 of these computers, giving MS-DOS 385,000 users, and leaving CP/M-86 with approximately 12,000 users.

CARL STORK  
Manager, European Business Development  
Microsoft  
Washington, US.

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April 14 1983



## Gathering storms on a mini

IN preparing a weather forecast, sufficient attention is paid to what happens to those showers and thunderstorms that pass undisturbed because the weather station is not enough to pick them up.

Such small weather systems used to be missed completely by weather observers, and their existence and development could only be guessed at. But the Meteorological Office is to install computer-based systems that will make a dramatic difference — one to detect thunderstorms in Europe and the North Atlantic, the other to measure rainfall in England and Wales.

The thunderstorm system will be the first in the world to track thunderstorms over a wide area using a computer. CAP Scientific has won the £200,000 contract to supply the system, which will be based on a Perkin-Elmer 3230 minicomputer.

The Meteorological Office will install seven outstations to record the electromagnetic radiation given off by the flashes: five stations spanning the UK, and two abroad in Gibraltar and Cyprus. The stations will be capable of detecting flashes anywhere in the world.

The radiation from the flashes of lightning will arrive at each outstation at a slightly different time measured in thousandths of a second. It is these time differences that will be used to fix the exact position.

# Taking the strain on a desk-top

ENGINEERS can now use a desk-top computer to calculate the loads on big structures with a package just announced by a small West Midlands consultancy. The application, called finite element analysis, is the calculation of stresses and strains on big structures like oil rigs or bridges, and involves solving large numbers of mathematical equations.

Until now, these complicated calculations needed a mainframe, and small engineering firms had to use a specialist bureau. But now Engineering Computer Services (ECS) of Tipton in West Midlands, has announced a package called Fesdec for an all-in-one price of about £20,000, which should appeal to small engineering consultancies.

Fesdec runs on Hewlett Packard's Series 200 desk-top computers and will work for small to medium sized problems, says support engineer Alan Perry. "If you want to analyse an oil rig, you still need to go to a big mainframe."

But Fesdec will enable engineers to investigate small parts of big problems to feel their way, and

only then transfer the data to a mainframe for the final analysis. This would save mainframe processing time, which does not come cheap from the bureau.

Fesdec is quicker to use than a mainframe because there is less wait for printout. Perry says it is also more user friendly, and does not require great technical knowledge to operate.

Written in Basic, it takes advantage of HP's extensions to save memory. But a version is being written in Fortran to attach to ECS's Graftec computer aided design package that runs on a Gould mini. Graftec is for metal cutting applications, and allows a designer to draw up the shape he wants, and then to produce a tape in control the metal cutting process.

Graftec allows existing Fortran programs to be linked up for extra modelling without having to write more code.

ECS has also just announced a new application for process control in the plastics industry, which has traditionally been rather a black art.

"We are trying to add science and cut out the guesswork," says sales executive Dave Kirkbright.



Computer-control comes to Sir Francis Drake's game.

## Bowls players have a ball

LEAF-GROWING and dense the two most popular pastimes in the North. But a close third is bowls. The game has about 500,000 players throughout the UK, many of whom pride themselves on their ability to run the ball on to a 1p piece from 60 feet. But now a small Scottish engineering company has increased the potential accuracy by making the world's first howl ball with computer control.

The diameter of the balls made is guaranteed accurate to the nearest thousandth of an inch, a tenfold increase in accuracy over existing balls.

The company, Tolpark Engineering of Cambusnash, says it already many top bowls players have shown interest. Managing director Colin Glendenning says that the company ran a test in which balls of various makes are given identical thrusts along the ground.

Needless to say, the Cambusnash balls all landed in exactly the same position, while those of other makers were off a foot or so. Sounds like the old saying "whiter than white" is all over again.

Still, if Glendenning is right, the new balls will greatly improve the games of top bowls players, although it won't make much difference to the average public green player. And Glendenning is right to point out that the old wooden balls which were so proudly used by the old masters were in fact not very accurate.

## PEOPLE



Memorex UK has appointed its customer engineering director John Clarke (above) as managing director. He replaces Mike Kitching, who has been promoted to vice-president of Memorex International. Clarke joined Memorex 12 years ago and Kitching has been MD of the UK company for five years.

John Furness has joined Rediffusion Computers as a systems analyst based in the Manchester office. He was formerly in the technical support team at the North Yorkshire County Council. The company has promoted Peter Oliver from senior engineer for the Newcastle area to branch customer services supervisor responsible for the North-eastern region. He joined the company in 1975.

Desire O'Connor has been named as the new director of product marketing for Apple Computer UK. He was previously with Bank Xerox for 15 years, laterally a head of the advanced systems division.

Massor Systems International has appointed three non-executive directors to the board. They are: Eric Salbu, president and chairman of the Massor Systems Corporation; Nigel Keen, representing the European Banking Company and other investors; and Neil Pearce, a consultant to Adress Technology.

## DIARY

MAY 10 How to work with salesmen. Institute of Data Processing Management Sheffield branch, Grosvenor House Hotel, Sheffield. 7.00.

MAY 12 Computer Open Day Exhibition. The Post House, Herbert Walter Avenue, Southampton. 10am to 6pm.

Electronics for Peace South-west branch holds its first meeting at Townsend House, Green Lane, Marshfield, Chippenham, Wiltshire. 8.00. All welcome. Tel: Tony Wilson on: Marshfield 710.

Discussion on Royal Charter. BCS Chapter 4 & Gloucestershire. Golden Valley Hotel. 7.30. Details from D. Went on Gloucester 416501.

MAY 11 AGM followed by computer graphics. BCS Bristol branch. St Vincent's Rocks Hotel, Clifton. 7.15.

Cable TV E. J. Fowler, British Telecom Research Laboratories.

## CONFERENCES

An international seminar on microcomputers and banks is being held in Luxembourg from September 15-16. Organised by Société des Postes Internationales de Luxembourg, speakers will look at the possibilities offered by microcomputers to banks, which problems they have solved; what effect they have had; and how the future stands for micros in banks. There will be presentations on choice of hardware and software, the structure of projects developed, the role of the traditional EDP department and difficulties in adaptation by staff to new organisations. Details from the organisers at Boite postale 110, L-2011 Luxembourg. Tel: 209 31; telex: 2259 Foire Lu.

The UK venue is the Middlesex Polytechnic Conference Centre, set in London's country parkland.

Who should attend? — software managers — systems builders — educators — computer professionals

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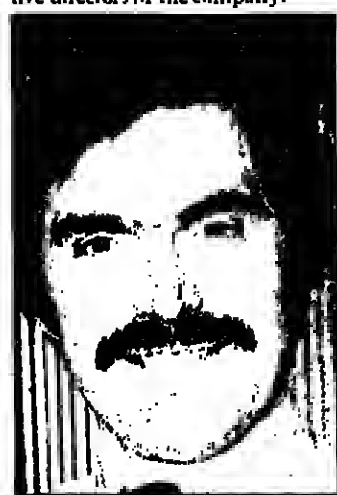
The software division of AT-I has appointed Jennifer Lane to handle marketing and publicity for its Pukin software. She joins from PR consultant, Nicholas Mender & Associates.

Colin Street has joined Hawke Electronics as product manager for the Interlink range of components and systems. He was previously distributor sales co-ordinator with Interlink.

Roland Wragg has joined the sales team of DEC distributor Alverton Computer Systems. He has 12 years' experience of the industry, as programmer and senior business analyst, developing systems for the Reckitt and Coleman group.

Sperry Corp has appointed Professor Dr Herbert Gruenewald to its international advisory board. He is chairman of the board of management of the West German chemicals company Bayer AG. His directorships in Germany include Allianz Insurance, the German Association for Economic Co-operation, Degussa AG, Hapag-Lloyd AG, and Metallgesellschaft AG. He is active in over 70 professional and academic associations and in 1979 was awarded the Johann-Friedrich Schöner, Silver Medal for outstanding achievement in business economics, company organisation and business leadership.

Dr Colin Phipps, chief executive and deputy chairman of L. J. de Pennington, has been appointed non-executive chairman of the board of Tandata Holdings. Peter Benton, until recently deputy chairman of British Telecom, and Doug Sarchett, director of Car-matic Investment Management, have been appointed non-executive directors of the company.

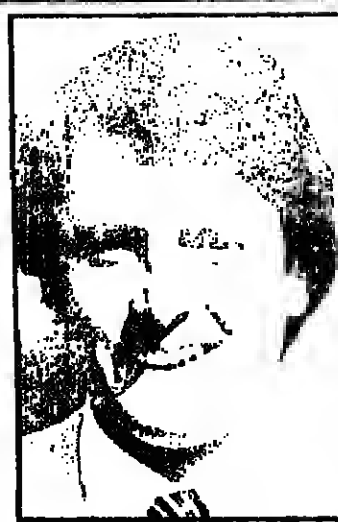


Andrew Crisp (above) has joined Thorn EMI Datacath as product support manager in the company's data products division. He was previously with the DEC authorised terminal distributor Comma Computers, in a senior customer and sales support role.

VNT Professional Services has announced a joint appointment. Eric Brindley has been named as account manager for all the company's dealings with ICL. He previously spent about 20 years with ICL, latterly as regional systems development manager. Malcolm Chadwick is to set up a VNT office in Solihull, West Midlands. He was formerly UK marketing manager with Pansophic Systems. Ron Cleasby joins the company as regional representative for the North-east of England. He was previously systems manager in the petrochemicals of ICL, based in Wilton. Finally, Barry Hodfield joins the Southern office of VNT with sales responsibility for Central London and South of the Thames. He was previously with SCR.

Lee Hazelgrove has joined In-sight Marketing & Personnel Consultants' London office as senior consultant. He has over 20 years' sales and marketing experience in the computer industry with IBM, ICL, National Semiconductor, and, most recently Terminal Display Systems.

The IBM Computer Users' Association gets a new secretary this month. He is Neville Boothroyd, who is about to retire from IBM, where he has worked since 1956, starting as an electronic switching engineer and serving latterly as marketing staff manager.



Adrian Bailey (above) has been appointed director of Greenwood-Smith Associates, the computer firm serving the timber industry. In addition he heads the company's communications division with responsibility for the sales and marketing of the GSA Nu-Dial telex equipment for microcomputers. His appointment as director gives him total control of the sales and marketing activities for all GSA hardware and software.

OCC Personnel (Southern) has appointed Peter Lloyd as senior consultant to head a specialist sales and marketing recruitment division.

## CONSULTANT'S CASEBOOK

# Transport of delight for the DPM

WHEN a user department first gets its own computer, it often finds it has bitten off more than it can chew. But the results, if properly managed, can be beneficial to users and to DP departments alike.

We had been called in by the DPM of a manufacturing company based just outside Reading. Our previous work for them had been mostly concerned with hardware reviews — operating system performance, storage upgrade studies, and the like. Their latest requirement, however, was for a feasibility study into the transport manager's need for his own minicomputer.

The company ran a sizeable truck fleet to distribute its finished goods to wholesalers around the country. They had been using Texas Instruments (TI) hand-held computers to calculate trip costs and evaluate alternative journeys. The transport department now felt that it was time they upgraded, under their own control, to a small mini.

The mini would allow them to store route data, mileage, and truck performance data online. This would save the present laborious manual table look ups and consequent input into the TI. But the DPM was worried. Didn't this represent the thin end of the wedge? Did it mark the start of a proliferation of equipment? And the end of professional standards?

I had met the DPM before. He was a nice bloke and a bit of a fitness fanatic, jogging every morning, and playing squash two or three times a week. I got on with him very well, having played squash myself for some years before old age caught up with me. I could see that he was genuinely concerned about an erosion of standards, and, of course, a lessening of the role of his department.

We were to perform the feasibility study on his behalf. In essence, we were to adjudicate and arbitrate — after all, wouldn't the mainframe be a far better alternative? On the face of it, and after

brief study, the answer was no, it wouldn't. The transport department already had a well defined knowledge of its requirement and the logic in the TI programs could easily be transcribed and extended on to the mini. The transport people felt that by the time they had relayed their knowledge to the computer department's systems analysts, they would already have incurred a high cost. In any event,

based on his experience with the TI system, the transport manager was adamant that full systems development on the mini would be

## John Simpson continues an occasional series

they were anxious to do so on programming for themselves, having done all the original work for their TI.

Indeed, one bright young spark had already been teaching himself Basic at home! We discussed the implications of a minicomputer installation with the transport manager. We outlined to him the need for a secure environment for the proposed new machine, the need for an in-house training exercise and the need for operating system expertise and a system of programming maintenance capability within his own department thereafter. We were at pains to point out all the potential pitfalls and headaches of running his own small DP shop.

The transport manager accepted all of this. And seemed to relish the prospect of getting his hands on his own machine.

It had become clear during the week it had taken to perform the study that there was little real understanding within the user department of the work of the professional computer people. The transport manager saw this new avenue as a way of keeping his DP costs to a minimum, while exercising full control over his own applications.

As in many companies, the cost of the computer department had been steadily rising over the years, and user departments were looking hard at ways of minimising their overheads.

As there were very real and tangible benefits from an upgrade

proach to the project, and increased the transport manager's appreciation of the professionalism of the DP function.

No further developments have been contemplated for this equipment, beyond minor upgrades and enhancements to the original application. Furthermore, no other equipment requests have been received from other parts of the organisation. The initial testing

troubles of "transport's" mini were broadcast throughout the company, and no other department seems keen to repeat them.

The transport people learned that there is a wealth of difference between the hand-held desk-top computing devices they were used to, and "real" computer equipment. They learned also, and came to respect, the benefits of the professional approach to design and programming as advocated by the DP department.

The company as a whole has benefited from an "increased efficiency in its truck fleet utilisation. And both users and DP personnel have come closer to understanding their mutual inter-dependence.

The computer department has now come to terms with the real-life outfit. And no longer see it as a threat.

achieved with something around six man months of programming effort. We were rather more sceptical and conservative in our estimates.

Additionally, we recommended that the project development standards in use by the DP department should be followed for this new development. Also, an experienced Basic programmer from the DP department should be assigned to the project in a hand-holding capacity to assist the transport people in their development.

The proposal was accepted in full (if somewhat reluctantly by the DPM) and equipment ordered and installed.

The outcome has been a successful user-led project giving all the benefits foreseen at the outset.

However, the development took three times as long as the transport department had foreseen. Despite our warnings and pointers, the user department did not comprehend the complexities of the development until the machine was installed and the practicalities of operating, maintaining, and developing on it were encountered.

To the surprise of the DPM the credibility of his department has risen dramatically. The programming expert assigned to assist in the project remained throughout the life of the project, and greatly assisted in guiding the user team in design and programming techniques.

The use of the established development standards ensured a well documented step-by-step ap-

proach to the project, and increased the transport manager's appreciation of the professionalism of the DP function.

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THIS week's cryptarithm, with three linked, division-sums attached one upon the other, looks just a jumble of letters at first sight. However, there is a hidden message, and an orderly 'problemist' might provide an immediate answer. Page 46 shows how.



## Voluntary system runs into race problem

COMMUNITY Service Volunteers has installed its first computer — and immediately run into a controversy over what information to store on it.

Industry Minister Kenneth Baker recently launched the computer, an Alpha Micro 1041S, to run CSV's volunteer placement system which helps to match new volunteers with suitable opportunities.

Details of volunteers' past and preferred work are kept to match with the types of service such as hospitals, old people's homes, group community hostels and residential centres for the physically and mentally handicapped.

About one in 10 of the volunteers has a criminal history, and this has to be recorded. Youths with a propensity to violence may not be suitable for keeping old ladies company.

But the main controversy is whether to hold details of race.

Workplace is compiled by Philip Hunter

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# RAPPORT

APR 1980 1:50







# Freelance market shows signs of breaking through the slump

Agencies' order books are running at the highest level in years, says Philip Hunter

The contract market is growing again after several stagnant years, with most of the big agencies reporting a modest increase in business this year. Biggest agency of all, VLI, took 136 new contracts in the first 10 weeks, a 6% increase on the previous 10.

"The order book is running at the highest level since 1974," says John O'Sullivan, managing director of the UK's third largest agency, Trident. Similar comments can be found elsewhere, although most agencies agree that the increase in business is modest



WHITE... Hope for operators.

as yet, and applies mainly to specialist rather than new-comers to the contract scene.

In for Cobol programmers will still find it hard to find their first contract. But VLI, programmers with several years' experience of the operating systems and database applications are much more in demand than a year ago, as are contractors for mini and microcomputers.

Comac, one of the young agencies which has rapidly grown in the improving climate of the last year, reports a new demand for programmers skilled in the CICS Cobol for microcomputers developed by Swindon-based Microfusions.

There are also contracts for Pascal programmers on microcomputers, according to Comac's founder director Mike Winsley.

But some market areas are declining. Demand for IBM CICS programmers is low, although Comac recently placed 20 contractors with IBM IMS experience at one client.

Agencies earn their living by taking a slice, usually 20% to 25%, of the fee charged for the contractor's services to the client company. They therefore have to adjust both the fee they charge the client, and the smaller amount of money passed on to the contractor

in order to balance supply and demand of labour and contracts.

At present the market favours the contractor. "We can find jobs for all good people," says O'Sullivan of Trident. "For every good contractor, we have three or four good jobs."

In an attempt to satisfy rising demand for skilled contractors, Trident is shortly starting a television advertising campaign. Another sign of improving times: Trident recently became the first agency to go public on the Unlisted Securities Market.

Footnote and fancy free contractors are attracted by the overseas market, which some agencies say has grown enormously in the last year. Comac says there are many contracts for people with financial and commercial expertise in both the Benelux countries and the Middle East.

There is also a market in the US for UK programmers, but demand is more fickle, and there can be a problem with immigration which can take several months. The big agencies can however speed up the immigration process by dealing directly with large US corporate clients.

Demand for contract operators has held up better than expected, although only three of the big agen-

cies, VLI, Knight Computer Services, and KPG, still deal in them. VLI admits that the mainframe operator is an endangered species, but will probably survive another six years.

However the increasing sophistication of hardware has expanded the role of operators to include network control, and even some systems programming.

KPG managing director Brian White says that contract operators are being hired more for specific tasks, and the length of contracts is increasing.

An attack was launched last year on the agencies by a company called Willoway, which published a national directory of contract staff. Willoway advertises for contractors just as the agencies do, and lists their curriculum vitae in the directory, to which companies can subscribe for £30 a year.

There are already 3,000 contractors listed on the directory, which so far as attracted about 60 subscribing companies, and has found jobs for about 30 contractors. The agencies hit back at Willoway's directory when it first came out by claiming that it would be too much work for a company to use, and that the human touch would be lost.

But Willoway has its own computer system just like

some of the agencies, which it uses to match customers' requirements with contractors. Willoway also undertakes to notify selected contractors of a company's interest, and it is up to the prospective contractor to phone the company for an interview.

Unlike the agencies it fails to negotiate pay and arrange the interview. But the company will probably be paying less for the contractor, since there is no agency cut. Some subscribers to the directory think that the contractor will do better out of it financially than the client will through lower fees.

Rather than claim that Willoway's directory lacks the human touch, or that it makes more work, agencies are probably on firmer ground to criticise it for failing to provide companies with access to skilled people. As one subscriber to the directory said recently: "There is a lot of riff raff on the directory."

A development being closely watched by some of the agencies is the Data Protection Bill. This is because some agencies keep confidential records of contractors which include unofficial references gained from previous employers, and even rival contractors.

If the Bill gives individuals access to manual records concerning them,

then the agencies will not be able to keep potentially libellous comments about contractors on file. As it is, agencies take great care over references for contractors.

Humphries of Knight points out that some information can be kept on a manual file that is not suitable for a computer file. "Epileptic contractors are for example unsuitable for an unaccompanied night shift. But they would be fine for normal work since there are plenty of people around to help if they have a fit."

HUMPHRIES... Keeping an eye on Data Protection Bill.

surprised," Humphries admits. Many of the rest would be unavailable for work, and their records would be out of date.

A development being closely watched by some of the agencies is the Data Protection Bill. This is because some agencies keep confidential records of contractors which include unofficial references gained from previous employers, and even rival contractors.

If the Bill gives individuals access to manual records concerning them,

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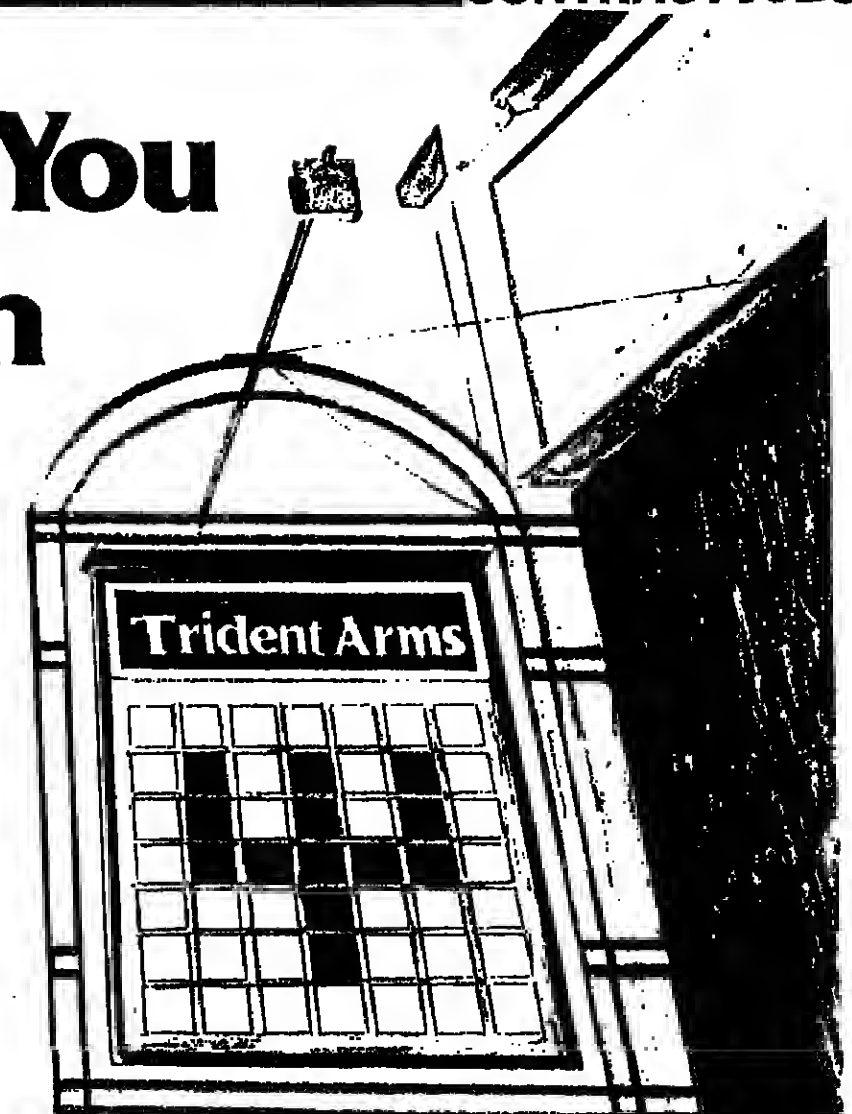
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Contact: STEVE WHITING, STEVE CASEY, PETER HOLLODAY, CHRIS WETHERLY, DAVE LONKHURST, DEREK WADHAM, SANDRA CAREY or EILEEN CARMICHAEL

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**HOLLAND**  
Contact: BILL TORBITT  
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**PERMANENT 0252 516141**

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Contact: PETER JEZEPH for an immediate confidential interview or write, enclosing a detailed c.v.

**OPERATIONS 0252 516141**

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Contact: ALAN PAINE or CHRIS MAGEE

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Programmers IBM 4300 RPGII DOS/VSE ASAP	367N
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VME-B, DOS (Systems Engineers)		Wills	3-6 months
VME-B, IDMS (Database Administrator)		Surry/W.Midlands	3 months
IBM	Skills	Location	Duration
OS/MVS, COBOL, CICS, (Systems Designer)		S. England	8 months
OS/MVS, COBOL, CICS, OL1		S. England	4-8 months
OS/MVS, COBOL, UNIPERSONNEL		Midx	8 months
DOS/VSE, COBOL, CICS, OL1		Surry	3-6 months
SCIENTIFIC	Skills	Location	Duration
PASCAL, MICRO'S		All Areas	3-8 months
CORAL, VAX		S.E./S.W. England	8 months
CORAL, MICRO'S		N.W. England	8 months
FORTRAN, VAX		S.W. England	8 months
ASSEMBLER, B086		S.E. England	8 months
OTHERS	Skills	Location	Duration
Burroughs, COBOL, DMS 11		London	3-8 months
DEC, VAX, COBOL, RAPPORT		Middle East	1 year
MICRO'S, CIS COBOL, CP-M		Berks	3 months

Contact Lauren Crowe  
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# Days of the creative genius are numbered

Software Blueprint and Examples. Yachan Chu. Lexington Books £29.50

THE reaction against programming as a mystical art form continues to gather momentum. Software engineering principles are being developed into practical books. The days of the creative genius inventing new assembler routines for calculating check digits in every installation are surely numbered.

Yachan Chu believes that software development should take place in the same rigorous manner as hardware engineering. His software blueprint serves the same purpose as a normal engineering blueprint. It should be understandable, detailed and correct. The purpose of his book is to explain the theory and illustrate the practice of the software blueprint.

The first chapter describes the software blueprint methodology and gives a fairly simple example

of its use. Chapter two deals with software engineering concepts. Much of this chapter would have been better placed prior to much of chapter one.

The following six chapters (75% of the book) consist of detailed examples of the use of the software blueprint. Finally the author describes the blueprint language SDL.

The author's clear style of writing makes this complex subject understandable. The book's size is increased dramatically by the wealth of detailed examples, and an understanding of the theory can be gained without going through all of them.

For the systems programmer wishing to apply the theory the examples provide excellent teaching material using applicable software systems.

It is becoming increasingly apparent that software engineering principles will require or cause or-



ganisational changes in the way programming is carried out. This book might not be readily understood by commercial application programmers and its examples would be foreign to them. The application of rigorous engineering principles may require greater

technical expertise located in fewer individuals. Yachan Chu's book is for specialist manufacturers of software and will undoubtedly be used in software design courses.

W. B. Scott-Jackson

# Database listing fills business need

Computer-Readable Databases: A Directory and Data Sourcebook. The American Society for Information Science and the University of Illinois. Compiled and edited by Martha Williams. Knowledge Industry Publications, 701 Westchester Ave., White Plains, New York. \$120.

IT'S all well and good to have a plethora of computer-readable databases available, but how do you go about finding the right one, and finding out what information it contains, and how comprehensive it is? Until recently, it wasn't easy - the information was scattered and not available from one encyclopaedic source.

This publication, a massive, 1,500-page listing of some 773 databases for sale to the business public, remedies that lack. The very existence of the book is graphic testimony to the growth of both the computer and database industries in recent years: the earlier edition, in 1979, listed 528 databases, so the number has grown significantly in recent years.

Databases included in this publication meet three criteria: computer-readable, public availability

for lease or sale, and word orientation, i.e. containing words or phrases, not just numbers. This means that some important databases have been omitted, since there are over 1,300 machine-readable databases now extant. Still, this work is valuable and comprehensive, and should meet most needs.

Some of the databases listed are available on tape, for processing at a buyer's DP site; others are accessible via terminal which, in practical terms, means subscribers can be located anywhere in the world, provided they are willing to pay the telecommunication costs. The implication for DP managers is that although they are probably not the prime target for the information in the book, they will inevitably become involved in some way in locating, recommending or processing the databases.

The listings show a fine, logical mind at work: every listing contains comprehensive information about the producer of the database.

Howard Karten

## PRODUCTS

# Programming and design station launch

A SIMPLE plug-in logic device programming module announced by Euro Electronics for the Digitec UP803 Logic Centre is said to turn it into a complete logic design station.

Logi-Fam will allow the design, programming and test of all currently available logic devices, including PALs, FPLAs, FPLs and FPGAs, says Euro Electronics. The result is a compact desk-top modular unit, with easily interchanged device adaptors to handle new devices as they become available. This eliminates obsolescence, and keeps both software and hardware up-to-date.

Another feature is that all the necessary design intelligence is resident in Logi-Fam and no accessory adaptors are necessary.

Logi-Fam contains all the software to enable the UP803 to work interactively in conjunction with its built-in CRT, keyboard and menu-driven software. In the de-

sign mode, the resident assembler allows direct keyboard entry of either Boolean equations or H and L tables for function definition, which are then displayed on the CRT. Alternatively, a matrix can be designed on the CRT using the cursor and the disassembly function can be used to display the Boolean function corresponding to the fuse pattern.

The wide range of PROM configurations and types now available is catered for by the Uni-Fam module which allows the UP-803 to program up to 300 types with just a switch selection. Device adaptors provide for wide range of devices and pin numbers.

Direct connection with microprocessor development systems is possible.

Euro Electronics (CW), Twyman House, 31 Camden Road, London NW1 1YE. Tel: 01-267 5416.



Shannon Dawson's acoustic hood keeps down office noise.

# 'Printer hoods cut noise by 85%

NEW ranges of UK-built printer hoods and terminal turntables have been launched by Shannon Dawson.

The hoods are said to cut noise by 85%. They are available for every printer on the market and can handle sheet-fed or continuous stationery.

Each hood has a removable base which enables the user to attach it to the desk rather than the printer. Gas dampers prevent the smoked perspex hood being damaged if it is slammed shut. Hoods with one or two cooling fans are available to match the needs of different devices. Prices start at £225.

The turntables enable two or more users to share one terminal. Standard models start at £30.50 and the heavy-duty versions cost from £72.50.

Shannon Dawson (CW), 36 Croydon Road, Beckenham, Kent BR3 4BH. Tel: 01-650 4818.

# Northern Telecom adds to range

LATEST development in Northern Telecom's advanced distributed data processing systems, the Model 555, offers a wide range of functions for a medium sized system, which is designed to handle both data and word processing applications with speed and economy.

The Model 555 features Winchester disc storage and a high speed CRT display.

It supports up to eight data stations (local or remote) and up to eight printers. It has 448 Kbytes of main memory, plus 22 Mbytes of Winchester disc storage. A 15 Mbyte tape cartridge gives secure system use and easy program maintenance, while an additional 149 Mbytes of removable disc storage is available for large volume requirements, says Northern Telecom.

Model 555 systems can be configured according to the user's requirements. Compatible peripherals include local and remote data stations.

Northern Telecom (CW), Data 100 House, Arden Grove, Harpenden, Herts. AL5 4UD. Tel: (05827) 63161.

# Major contribution to computer education

Structured Programming with BBC Basic. Roy Atherton. Ellis Horwood (1983). £6.95 paperback.

AT last we are beginning to see the emergence of a third generation of Basic programming texts.

When I wrote my own (first generation) book on Basic back in 1976, I thought I had done my duty by covering the rules of the language in a sensible order and presenting some example programs. In those days time-sharing on a mainframe or large mini was the normal mode of using Basic.

Then the microcomputer volcano erupted, swiftly followed by a lava flow of second generation (and mostly second rate) Basic books. Aimed squarely at the home user, these volumes were rushed into print to tell the poor punter what the manufacturer's manual had left out. In other words they were full of 'hints and tips' - arcane pieces of information about ROM locations, machine-code kludges and so forth.

Now the audience is becoming more sophisticated. Even committed hobbyists realise that there

is more to being a good programmer than knowing plenty of VDU codes or memorising lots of arbitrary PEEKS and POKES.

Atherton's book fulfils the requirements of this new audience. It stresses a few fundamental programming concepts instead of a lot of messy details. As he says: "A good program is one that is easily understood. That implies that its approaches should reflect its function and that, in turn, implies that it should be well-structured in its design, coding and implementation."

BBC Basic has just enough structure to raise it above an important threshold - the point at which program design dictates syntactic form, rather than vice versa - and Atherton exploits this to the full. By doing so he has made a significant contribution to computer education.

If this book is widely adopted in schools and colleges it will have a very good effect. Its readers will learn the skills of problem analysis and program design before being dazzled by the superficial brilliance of the clever-tricks brigade.

Richard Forsyth

# Useful text book - if you can unravel the threads

Decision Support Systems for Effective Planning and Control. Robert Thierauf. Prentice Hall. £27.20.

DECISION Support Systems (as discussed in 1980 at the 13th Hawaii International Conference on System Sciences) describes the concept of interactive computer based systems to support unstructured decision-making. R. J. Thierauf attempts to describe and illustrate DSS using a major case study. This covers the analysis, design and evaluation of the main systems in a progressive manufacturing company.

Part one surveys current information systems, ie MIS and DDI and describes the role of DSS in that context.

Part two describes DSS and an analytical framework for its use. Many of the points made in part one are reinforced.

Part three covers design aspects of equipment selection with several perhaps superfluous illustra-

tions of equipment (eg IBM 3770 and 3780 Direct Access storage devices).

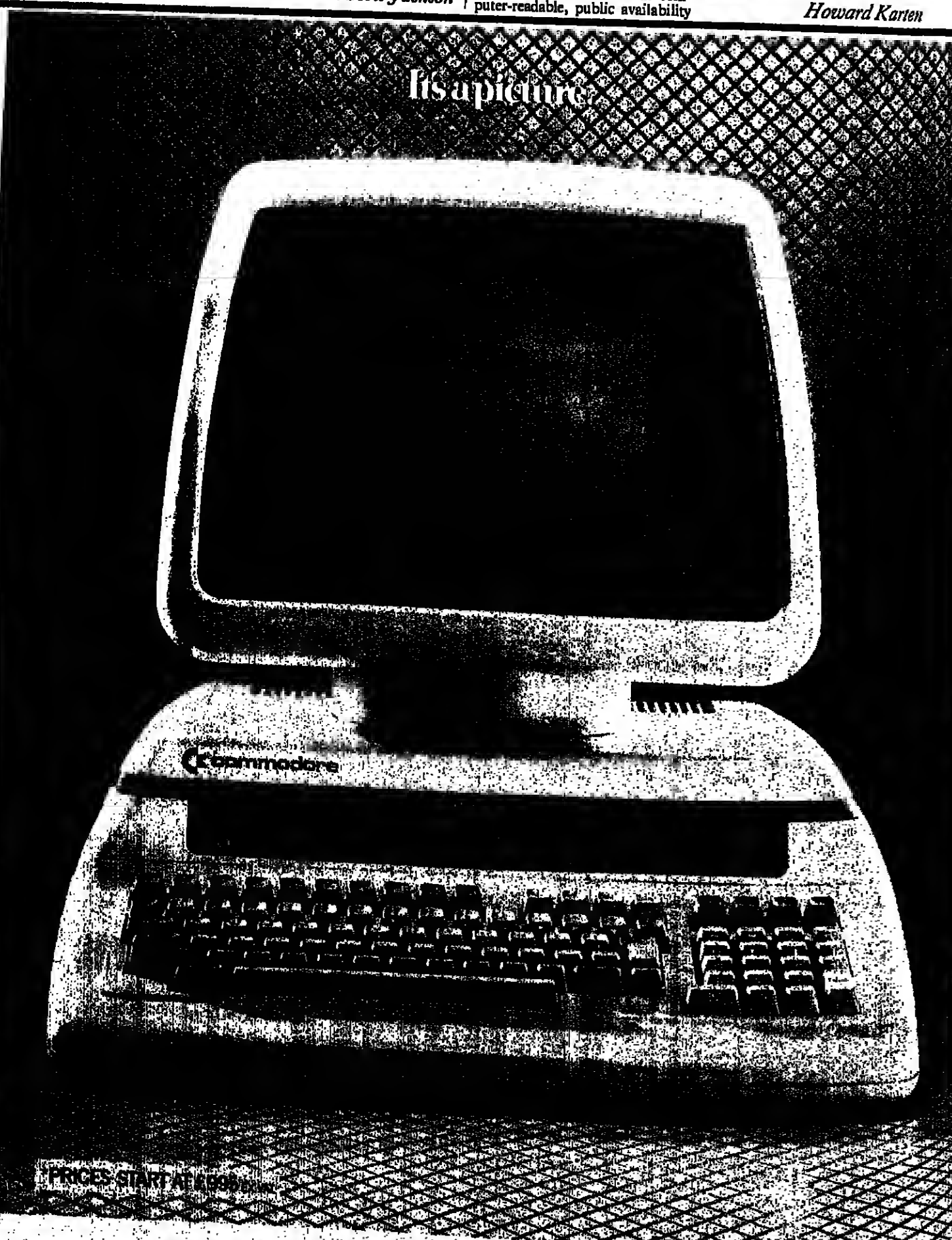
Part four discusses strategic planning at the corporate level and introduces specific packages.

Part five again discusses several specific packages and illustrates several subsystems for the overall case study.

Part six introduces various behavioural theories which impinge on DSS and completes the case study. The text is wide ranging and it is often difficult to 'weight' the information given. Some of the context is probably background information but is not easily recognised as such.

Despite being overweight the book fulfils its function as a textbook on Decision Support Systems. It would be usefully read by systems practitioners or students provided they can unravel and separate the complex threads running through the text.

W. S. J.



# And it's worth a thousand words.

The brilliant new Commodore 700 is arguably the most aesthetically pleasing micro-computer ever designed.

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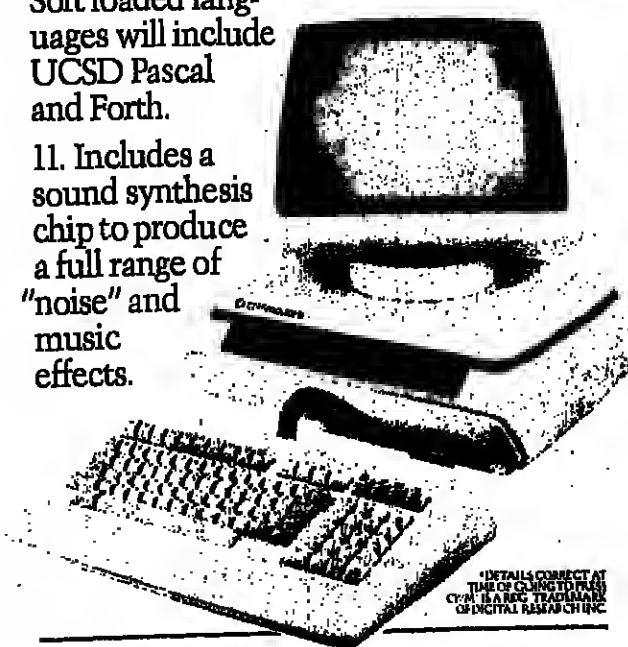
Built to a standard and to a specification which no competitor comes close to emulating, and at a price\* which makes this fact all the more remarkable, the Commodore 700 is unique.

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## SUMMARY SPECIFICATION

1. Tilt and swivel anti-glare 80 column green-on-black display screen.
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6. Integral dual disk drives with direct memory access available as an option.
7. An optional dual processor - the Z80 or 8088 - can operate concurrently with the standard 6509. This enables access to the existing library of CP/M® programs.
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9. Supports a full range of peripherals including dual disk drives, hard disks, dot matrix and letter quality printers, and plotters. Works with all existing Commodore systems peripherals.
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11. Includes a sound synthesis chip to produce a full range of "noise" and music effects.



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For a thousand words and more on the Commodore 700, and the address of your nearest Commodore dealer, telephone or write to us at:  
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675 Ajax Avenue, Slough, Berkshire SL1 4BG.  
Telephone: Slough (0753) 79292.

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Output from the PRINCIPLE plotting system.

# Speeding designs

AN electrostatic plotting system called PRINCIPLE (Printed and Integrated Circuits Plotted Electrostatically) launched by Calma is designed to speed the production of high-resolution hard-copy output from the company's GDS II computer-aided printed circuit and microelectronics design systems.

The new system produces plots more than 10 times faster than a conventional pen plotter, says Calma, and offers higher reliability because of the low number of moving parts. In addition, built-in purpose-designed software removes the need for operator programming and offers further speed increases in what has traditionally been a bottleneck in the electronics

CAD/CAM process. Tapes or disc files can be generated which allow the electrostatic plotter to function in the background without interrupting the design process, and extra copies of each drawing can be produced in a matter of minutes, says Calma. Plots are printed with a resolution of 200 dots an inch, allowing complex VLSI circuits or dense circuit boards to appear in sharp, readable detail. The system can produce plots on opaque or translucent paper and on transparent film.

Calma UK (CW), Beech House, London Road, Camberley, Surrey GU15 3HR. Tel: (0276) 682021.

# Personal security

A NEW magnetic stripe card validator from Datastripe provides a simple and secure way of encoding a personal identification number on a standard card with a magnetic stripe. The Magtek MT-60 is compatible with all the main personal identification number coding methods. It is aimed at banks and building societies and security applications such as controlling access to restricted areas.

A bank clerk, say, can pass a customer's card through the device to validate the account details. The customer then enters his or her identification number, using the wipe display to check that it is correctly entered. The device validates the card and the number.

Datastripe (CW), 491-493 London Road, Camberley, Surrey. Tel: (0276) 682921.

# Digitiser family

GTCO Corporation, of Rockville, Maryland, has appointed Dicoll Electronics, of Basingstoke, as UK distributor of its Dig-Pad 5 family of digitisers and the Graphic Analysis Package 1 (GAP-1) for the IBM Personal Computer.

The digitisers, which are supplied to OEMs and end users, are based on the concept of using a single-board microprocessor-based controller which is functionally compatible with a large variety of tablet sizes. All use the identical controller and the same interface.

Another advantage is that software written for one size of digitiser can be used for any size tablet varying from 10in x 10in to 42in x 60in.

Dicoll Electronics (CW), Bond Close, Kingsland Estate, Basingstoke, Hants. RG24 0QB. Tel: Basingstoke 61551.



# APPOINTMENTS

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# CONTRACTS

## Systems and Programming

### OVERSEAS ASSIGNMENTS

**UNIVAC 1100 EXEC 8** - USA/Europe/M. East  
**UNIVAC 1100 DMS TIP** - USA/Europe/M. East  
**BURROUGHS MEDIUM RANGE** - USA/Europe/M. East

Project Lead for UNIVAC 1100 EXEC 8 experience.  
Systems Analyst Burroughs medium range or UNIVAC 1100  
experience.  
Programmers with UNIVAC 1100 DMS TIP  
experience.

**Datapoint** - Europe  
Programmers required for conversion from DOS to RMS to take place in  
several cities over Europe.

**Honeywell L6** - Netherlands  
Programmers required for two projects. (One lasting two months the  
other 3/4 months. Start date May).

**IBM 3270 Analyst Programmer** - Brussels  
IBM RAMS ASSEMBLER experience to work on DOS to MVS conversion. 2 year  
contract. Start date July for 3/6 months.

**IBM MVS Systems Programmer** - Brussels  
Experience of JES 2, AC/VSAM, VSAM, TSO/SPF SMP desirable. 2 year  
contract. Start date July for 3/6 months.

**IBM SYSTEM 23/BASIC** - Holland  
Design/Lead Programmer required from mid May for 3-4 months to  
work on new materials management system. Good experience of  
System 23/BASIC needed.

**BURROUGHS/COBOL/LINC** - France  
Project Manager required with experience of LINC and COBOL together  
with fluency in business French to work on this potentially long term  
contract (18 months - 2 years).

**SEL 32/MPX 32/ASSEMBLER/FORTRAN** - Belgium  
Analyst/Programmers required for initial 6 months contract with good  
experience of above mentioned skills. Will be working on a DataLink  
handler.

### U.K. ASSIGNMENTS

**IBM 4341 or IBM 8100 Experience** - London  
Team Leader to Manage a team of 10 people, standards and procedures  
are important.

**Data General/Hewlett Packard/ICL** - London  
Consultant Analyst/Senior Analyst Programmer to join professional team  
developing variety of business systems. Successful candidate will be  
responsible for developing and implementing mini and micro systems.  
Start Date Mid/End May duration of 1 year.

**Univac 90/30 DMS TIP** - Herts  
Programmer required as soon as possible. Duration indefinite.

**VAX/VMS/PASCAL or BLISS** - West of London  
2-4 Programmers required A.S.A.P. for 4-5 months to work on a point of sale  
11/RX111 using PASCAL, BLISS or BCPL. Contract duration is 4 months.

**MOTOROLA 6809** - Bedfordshire  
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**CORAL 66/PASCAL - INTEL/PDP** - North West England  
Various levels of expertise required for 4-6 month contracts to start  
immediately. Real time experience is essential and a knowledge of  
messages switching and MASCOY advantageous.

**IBM 4341 or IBM 8100 Experience** - London  
Team Leader to Manage a team of 10 people, standards and procedures  
are important.

**Data General/Hewlett Packard/ICL** - London  
Consultant Analyst/Senior Analyst Programmer to join professional team  
developing variety of business systems. Successful candidate will be  
responsible for developing and implementing mini and micro systems.  
Start Date Mid/End May duration of 1 year.

**Univac 90/30 DMS TIP** - Herts  
Programmer required as soon as possible. Duration indefinite.

**VAX/VMS/PASCAL or BLISS** - West of London  
2-4 Programmers required A.S.A.P. for 4-5 months to work on a point of sale  
11/RX111 using PASCAL, BLISS or BCPL. Contract duration is 4 months.

**MOTOROLA 6809** - Bedfordshire  
Programmer required A.S.A.P. for 4-5 months to work on a point of sale  
system. Must have experience of 6809 ASSEMBLER and PASCAL.

**CORAL 66/PASCAL - INTEL/PDP** - North West England  
Various levels of expertise required for 4-6 month contracts to start  
immediately. Real time experience is essential and a knowledge of  
messages switching and MASCOY advantageous.

**ICL 2900 VMEB TP and TPMS** - Newcastle/Herts  
Project Managers and Senior Project Manager required for contracts  
starting in May and June. Duration 6 months +.

**Micro - DRS Range/Philips P3500** - West Midlands  
Programmers urgently required for new developments and maintenance  
systems. Good C/P/M people are welcome. Immediate start. Duration  
3 months +.

**Fortran Programmer** - Oxfordshire  
Preferably with three years post graduate experience in process control  
graphics, mini computer file handling. Will be using plot 10 graphics  
package. Start date ASAP, duration 3/4 months.

**IBM 8100 Programmers** - London & N. England  
Programmer required as soon as possible. Duration indefinite.

**ICL ME 29 Programmers** - Midlands  
Programmer required as soon as possible. Duration indefinite.

**ICL 2900 VME COBOL IDMSX** - London & Midlands  
Programmers - London & Midlands

**IBM 4341 COBOL OS TSO JCL** - Surrey  
Programmers - Surrey

**IBM 4341 or IBM 8100 Experience** - London  
Team Leader to Manage a team of 10 people, standards and procedures  
are important.

**Data General/Hewlett Packard/ICL** - London  
Consultant Analyst/Senior Analyst Programmer to join professional team  
developing variety of business systems. Successful candidate will be  
responsible for developing and implementing mini and micro systems.  
Start Date Mid/End May duration of 1 year.

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## OPERATIONS

**Contract and Permanent**  
**PERMANENT**  
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Operator  
This position requires a flexible individual with a minimum of 9 months OS/VS1 experience to work 2 shifts  
within a fairly progressive site.

**IBM SYSTEM 8/15D + SYSTEM 38**  
Senior Operator  
A person with a solid System 38 background and a professional manner will progress onto the System 38. Good  
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**IBM 4341 - VM DOS/VSE CICS**  
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## LONDON AND HOME COUNTIES

## INTERNATIONAL FINANCE

**PROGRAMMER/ANALYSTS** £11,000  
The world of computer finance is developing rapidly. Can you develop your COBOL/CICS skills as fast? If you can offer a minimum of 2 years solid IBM COBOL experience in a financial environment, and would like the opportunity to become involved in on-line system development, then this "five chip" company can offer you unlimited career progression.

## INTERNATIONAL COMPANY

**SOFTWARE SUPPORT** £20,000  
This international company, already marketing and supporting several well known software products, requires a number of technically minded professionals to supplement their support team. In-depth knowledge of MVS and TSC, coupled with a solid CICS or IMS background, will secure you a very rewarding future with the opportunity for international travel.

## INTERNATIONAL OIL COMPANY

**PROGRAMMERS and PROG/ANALYSTS** £11,000  
A major oil concern with a development schedule planned well into the late 80's requires several PL/1 and COBOL Programmers and Analysts/Programmers to help create a new team. You will be working in an IBM DB/DC environment, so any on-line and/or Database exposure will be advantageous.

## INVESTMENT PLANS AND TRUSTS

**SENIOR ANALYST/PROGRAMMER** £13,000  
Our clients require a senior member for a team heavily involved in the development of on-line financial systems. Experience in lending terms, together with the design and implementation of CICS-COBOL based systems is sought and preparation to management positions envisaged for the successful applicant.

## SOFTWARE HOUSE

**PROGRAMMERS** £10,000  
Programmers with a good knowledge of commercial applications and a mature outlook are required by a well known software house with offices in London and Surrey. Working within a small team with client and user contact at all levels on DEC and VAX, you will find this company can offer you the opportunities and experience that you perhaps lack in your present post. A biannual salary review is just one of the benefits along with a truly negotiable salary.

## REQUIRE MORE ANALYSIS?

**ANALYST PROGRAMMER** £10,000  
A leading LIFE INSURANCE COMPANY urgently needs to recruit an ANALYST PROGRAMMER to augment an existing team. Working in COBOL on ICL2000 and 1900 under JME and VME with perhaps some systems experience, the candidate will need to demonstrate a background in solid analytical work with at least four years overall O.P. experience. This post will involve some programming. Flexible hours, Xmas bonus, free lunches are just some of the benefits.

## MANUFACTURING

**SENIOR PROGRAMMER** £10,000  
A well known Kent based company using both ICL 2900 and I.P. kit are currently seeking to fill this vacancy. A solid programming background covering the full range of commercial applications is needed. This may be a very good career opportunity for candidates considering their next move. Relocation expenses could be offered.

## VAX/VMS OPPORTUNITY

**SENIOR SYSTEMS PROGRAMMER** £19K-20K  
Convergen work, debugging, monitor work, client support, training, system maintenance. These are some of the areas of work that you will be involved in. All work is on DEC kit with the main emphasis on VAX under VMS. For further details please contact us at the earliest opportunity.

**STOP PRESS: LONDON, 2 Programme, RPOIL, COBOL, commercial background, £8,500-9,500.**

## G S D CONSULTANCY

**ALL LEVELS** £10-14,000  
Excellent opportunities exist for Analyst/Programmers and Project Leaders within this specialist consultancy. The company develops commercial applications software for IBM S/34 and S/36 users and have a remarkably successful track record in their field. Good RPII or ILL experience is needed, coupled with solid analysis skills and team leadership for the more senior positions.

## MAJOR FINANCIAL CONCERN

**COBOL PROGRAMMERS** £9,000  
One of the largest financial houses in the city are currently looking for programmers with about 18 months COBOL experience gained in an IBM environment. They can offer a great deal of development work, with the possibility of on-line and database involvement. Company benefits include interest free loans and relocation expenses where applicable.

## EXCELLENT BENEFITS package

**SENIOR PROGRAMMER** £10,000  
Due to major development project our clients require experienced PL/1 programming staff with an IBM OS or MVS background. The company offers very good scope for personal progression together with a benefits package that includes MORTGAGE ASSISTANCE and RELOCATION where appropriate.

## OPPORTUNITIES FOR ANALYSTS

**SENIOR SYSTEMS ANALYSTS** £18,000  
A number of city-based clients are looking for senior staff currently. Finance systems oriented, candidates must be able to offer a good track record in designing and implementing on-line/database systems on IBM equipment. Opportunities are available in INSURANCE, BANKING and BROKING.

## MIDLANDS

## DATABASE PROGRAMMING

**SENIOR PROGRAMMER** £10,000  
We are looking for someone with sound Sperry Univac experience, either on the 1100 series machine or the V77 series. The company are multi-national and committed to a large development program. The position is very responsible and is the first step in the company's senior management ladder.

## PROGRAMMER

**CIS-COBOL** £8,000  
We are looking for someone with 1-2 years experience of CIS-COBOL, on either PCL hardware or ORS hardware. A high negotiable salary is provided, with the opportunity for travel.

## MANUFACTURING

**SENIOR PROGRAMMER** £10,500  
Our clients are a large manufacturing organisation and are looking for a senior COBOL programmer to lead a team of 4-5 people. The installation is an IBM 3031, using IMS utilities. 3-4 years experience in a manufacturing or business background is ideal.

## SOUTH AFRICA AND U.K.

**PROGRAMMER/ANALYSTS** £8,000  
A large software group committed to providing bespoke systems for first time users have several positions open in their Midlands or London offices as well as in their South African subsidiary. A negotiable salary with car is provided. We are looking for COBOL or BASIC programmers, with experience of Mini-computers, such as Wang, Texas Instruments, CMC, Crite General or Univac.

If you are unable to contact us during office hours but would like to discuss your future with one of our consultants, phone 0787 280748 or 01-985 3819 during the evening or at weekends.

## MANAGEMENT &amp; EXECUTIVE SELECTION

telephone  
01-637 9611

## Leadership in R&amp;D

for Micro Computer Leaders  
Cambridge

Are you the young, business orientated systems designer, who can successfully pilot innovative project development?

An exceptional company requires an exceptional individual combining R&D experience, communication skills, ambition and the ability to motivate.

Salary and excellent company benefits will reflect the importance of the position.

## Software Designers

Wiltshire & Home Counties

Our client requires creative individuals to expand their design group.

New development opportunities include involvement with the latest microprocessor technology, including Pixel, Graphics, Unix 'C', Motorola 68000, CPM/M plus local area networks.

These opportunities and an excellent career path are open to applicants at all levels who have Assembler experience.

Salaries are negotiable and relocation paid where applicable.

For further details contact Karen Whelan on 01-637 9611.

Suite 201/6 Albany House **MANAGEMENT & EXECUTIVE SELECTION**  
324 Regent Street London W1



The people our client is seeking will score ten by having the ability and experience to analyse problems and develop cost effective solutions. However they must also have the breadth of vision to appreciate the ways in which technological developments can be used to meet not only the current but also the future business needs of the company, and therefore continue up the scale.

The three outstanding opportunities will be taken by graduates whose background meets the experience requirements and who have the ability to communicate their ideas and show a potential to move into management.

## COMMUNICATIONS

The experience required is a minimum of 5 years which should include multi-site data and voice communications. An IBM user background with experience of SNA (VTAM, NCP) on MVS or DOS systems is essential and previous experience of network design and implementation would be ideal.

## DATABASE

This position would suit an IBM Systems Programmer with 5 years experience and at least 2 years experience of MVS DLI in a support or design role.

## OFFICE AUTOMATION

We would like to talk to a Senior Analyst/Programmer with a background of at least 5 years business systems experience on mainframes and the application of minicomputers, micro's and word processing in an office environment.

Our Client is a well-known, highly regarded British Company with a considerable investment in computer systems. They will provide an attractive remuneration package which will include salaries of up to £16,500 p.a., BUPA, share option and bonus schemes (after a qualifying period), contributory pension and a subsidised restaurant.

The positions will be based in Central London and relocation assistance will be available if appropriate.

To find out more about these exciting opportunities to push your career further up the scale, telephone now or send the coupon below and we will forward an Application Form and a comprehensive Company Profile.

Please send an Application Form and Company Profile to: Q489

Position applied for: \_\_\_\_\_

Surname: \_\_\_\_\_ First names: \_\_\_\_\_

Full address: \_\_\_\_\_

Home tel: \_\_\_\_\_ Work tel: \_\_\_\_\_ Ext: \_\_\_\_\_

**RJB MANPOWER SERVICES LTD.**  
FREEPOST 24, London W1E 5JZ Tel: 01-439 8591 (24hour answerphone)

## PROJECT LEADER

## SYSTEMS ANALYST

## CHELTENHAM

Spirax Sarco Ltd. is an International Company based in Cheltenham and is market leader in the field of Energy Saving Control Equipment for steam water and compressed air services.

We will shortly be commencing an extensive programme of computer systems implementation in Sales, Financial and Manufacturing application areas. In the main, systems will be based on computer software application package solutions. The following vacancies have arisen:

## PROJECT LEADER

We require a Project Leader with the ability to head up a small team of data processing specialists and user department personnel, to be engaged initially in the Sales Order Processing and Accounting areas.

Applicants should have had at least four years' data processing experience at either Project Leader or Business/Systems Analyst level, dealing with commercial type applications.

We are looking for someone aged between 30-35 with a proven track record of successful computer systems implementation.

## SYSTEMS ANALYST

To work as part of the Project Team concentrating on manufacturing systems, we require a Systems Analyst with a minimum of three years' experience, preferably with some programming background.

Applicants should have experience of all phases of computer systems project development, especially in the design and implementation of commercial systems. Preferred age is 28-35.

Attractive salaries will be linked to age and experience and there are additional fringe benefits in keeping with a progressive company, including non-contributory pension scheme and BUPA membership.

Please apply in writing, giving details of career to date to:

Computer Systems Manager  
Spirax Sarco Ltd.  
Cheltenham House  
Cheltenham GL53 9ER



## LEARN d BASE II

Analyst on IBM System 34 with 3 years prog/anal on minis/micros. Supervision and travel. International company - Midlands. £12,000.  
Ring Ridgeway Executive Selection Leithershead (0372) 376013

## Freelancers

... In the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting contract assignments. Our current requirements include analyst/programmers with:

PL/1  
MARK IV  
UNIVAC 1100

**P-E Computer Services Limited**

Winchester House, Fountain Street, Manchester M2 2EF. Tel. 061-226 2276

## OEM Printer Sales

c. £22k+Car

— CLOSE IN ON A GROWTH MARKET —

One of the UK's leading peripheral suppliers, our client is the autonomous and high growth subsidiary of a major international company.

With exciting new products being launched, they now seek experienced and professional sales executives to promote a wide and competitively priced range of equipment in the Midlands and South.

To take full advantage of the outstanding career opportunities you must be able to demonstrate a highly successful track record, ideally gained in the peripheral OEM market place.

If you are successful and plan to grow, our client offers high basic salaries, realistic targets and an executive car along with the security of a non-contributory pension scheme and permanent health insurance.

For further details please telephone Maidenhead (0628) 74274 or write in confidence to, Charvil Lewis International, 27 Marlow Road, Maidenhead, Berkshire.

**Charvil Lewis**  
INTERNATIONAL

## CONTRACT OPERATOR

IBM VM/CMS  
DOS VSE  
SALARY  
£220 PER WEEK  
(0273) 505145

## CONTRACT STAFF

THE CONTRACT STAFF  
RECRUITMENT FEATURE  
APPEARS ON PAGES 22 & 23



# SOFTWARE SUPPORT

## U.K. and EUROPE MINI-MICRO MARKET

This organisation, the autonomous subsidiary of a Major International Corporation, is seeking to appoint additional SOFTWARE SUPPORT SPECIALISTS to back an ambitious European marketing program for high performance mini-microcomputer products.

Sound hardware and proven commercial application software, running under the PICK operating system, make this an outstandingly versatile computer package.

Ideally you will be a mature software professional with mini computer industry experience, a knowledge of the PICK operating system and the personality to support a dynamic marketing operation.

All positions are UK based, close to LONDON and some will involve European travel. Rewards from base salary, bonus, car plus other large company benefits are excellent and totally commensurate with the importance attached to these key positions.

Telephone DOUG SNEDDON or JOHN WILLS at I.M.P.C. on 01-486-5644 for an informed discussion.



## TOP JOBS FOR TOP PEOPLE Insight Marketing & Personnel Consultants

MANCHESTER—Austin House, Charlotte Street, Manchester 1. Telephone: 061 236 7026  
LONDON—72-75 Marylebone High Street, London W1M 4AJ. Telephone: 01-486 5644

## Opportunities with Leading Software House

As one of the foremost computer systems companies in the U.K. we are now able to offer more exciting and challenging career opportunities on interesting and worthwhile projects.

**ICL • COBOL • ME29 • TME • IOMS**  
**£10,000-£16,000**

### Project Manager

With strong technical background. Must be capable of pre- and post-sales support activity without assistance.

### Support Technicians

Ability to provide demonstrations of product to prospects. Implement product on customer site and offer subsequent support.

### Design Consultant

Capable of interfacing software products to ME29, in depth technical knowledge required. Experience of ICL cash receipting, terminals an advantage.

**DEC • VAX • VMS • BASIC + 2**  
**£7,250-£14,000**

### Senior Consultant

Ability to co-ordinate program development, system testing and documentation.

### Programmer/Senior Programmer

Within our command control and communications division we are seeking to recruit a graduate programmer or senior programmer (maths/physics degree) with graphics knowledge.

### Programmers

To join our development team. Minimum of two years' experience.

**SYSTEMS PROGRAMMERS/  
CONSULTANTS** **£9-£12,000**

Applicants should have:  
At least four years' systems programming experience. Real-time operating systems experience. Assembly and preferably COBOL. Knowledge of Ferranti Argus would be ideal but not essential.

**PRINCIPAL CONSULTANTS** **£11,000+**

These posts require experience of pre-sales activity and the ability to accept responsibility for major projects from initial customer negotiations, through implementation to final acceptance.

Applicants should have:  
At least eight years' experience. Project Management and leadership experience. Real-time systems experience. Experience of working within fixed price contracts.

**GRADUATE PROGRAMMER** **£7,000+**

Maths/Physics Degree. At least two years' experience. Graphics knowledge.

All the posts are permanent. The package includes a profit sharing scheme, free lunches and a subsidised pension and permanent health scheme.

Apply in writing to: Mrs P. M. Moir, Personnel Officer, Leasco Software Limited, 160-162 Bath Road, Maidenhead, Berkshire SL6 4LD. Or telephone (0628) 23391 for further details.

**Leasco**  
SOFTWARE LIMITED

## COMPUTER OPERATIONS SUPPORT ANALYSTS

Britoil is a resourceful and energetic company in North Sea oil exploration and production, and as projects become more complex so the role of operations support becomes more critical.

Our Glasgow-based Information Technology Department, which employs some 170 skilled staff, is the focal point of our computer network serving the Company throughout the UK.

Information Technology Department is centred on an IBM 3033N, running OS/MVS/JES2 with ACF2, HSM, and TSO/SPF. Last year saw the installation of a 3850 Mass Storage System, with plans to include installing 3380 disk drives.

We are seeking Support Analysts with experience in an IBM operations environment, who have a good working knowledge of JCL, TSO and utilities. Programming experience would be an added advantage.

Specific duties will be to:  
• Provide technical assistance to users.  
• Evaluate new

products from an operations viewpoint.

• Ensure standards for JCL, PROCS and Operation manuals are maintained.  
• Provide Spool Management functions using HSM and FDR.

• Improve existing and implement new systems.  
• Write JCL and operational documentation.

In addition to the obvious scope and challenge of the job, Information Technology Department provides a comprehensive training programme of courses to help keep employees abreast of the latest technical and software developments. We offer competitive salary and benefits package, which includes (where appropriate) generous assistance with relocation.

Detailed cv's should be submitted to: Bob Evans, Senior Personnel Officer, Britoil plc, 150 St. Vincent Street, Glasgow G2 5LJ, quoting ref. COSA/RWE/CW. These posts are open to men and women.

**Britoil**

The Polytechnic of North London

### GRAPHICS ADVISER

There is a vacancy for a Graphics Adviser in the Polytechnic Computing Service to promote the wider use of computer graphics facilities throughout the Polytechnic. Experience with using interactive graphics is essential, together with an interest in developing software to supplement existing packages. The principal responsibility is to advise users on applications and assist them in implementation.

The Computing Service offers a wide range of facilities, based on a Dec System 10, a VAX 11/780 and over 50 microcomputers. Applicants must be graduates or equivalent professional status with at least one year's solid programming experience, preferably in Pascal, Fortran or Basic.

Salary scale: £6,458-£8,184 inclusive of London Allowance. Commencing salary in accordance with qualifications and experience.

### PROGRAMMING ASSISTANT

There is also a vacancy for a trainee programmer who will be principally concerned with giving advice and assistance to students and staff in the use of microfilms and microcomputers. Some programming experience is essential, preferably in Cobol and Pascal. Degree or equivalent in the normal educational requirements.

Salary scale: £3,505-£7,088 inclusive of London Allowance. For further details and application form please apply to Peter Jefferys, Head of Computing Service, Polytechnic of North London, Grafton House, Holloway N7 8DB. Tel: 807 2330, Ext. 2266.

MID GLAMORGAN COUNTY COUNCIL  
EDUCATION COMMITTEE

### TEACHING STAFF

MERTHYR TYDFIL DISTRICT  
COMPREHENSIVE SCHOOL  
AFON TAF HIGH

Well-qualified and experienced teacher required to introduce and establish computer studies and Information Technology. The school already has a number of BBC microcomputers and a research machine 3802 with peripheral OEE equipment.

The person appointed will take charge of the subject and be responsible for its organisation throughout the school. Scale 2.

Application forms, to be returned by 18th May, 1983, obtainable on receipt of a stamped, addressed, foolscap envelope from the District Education Officer, District Education Office, Pontmorfa, Merthyr Tydfil.

K. S. HOPKINS  
Director of Education  
(3951)

## TOMORROW'S COMMUNICATIONS BUSINESS

...today's specialist action

### COMMUNICATIONS CONSULTANCY

to £18000 + Car

Specialist roles evaluating and specifying a variety of customer networks, working within a young, dynamic team.

On offer are: influence, initiative and involvement. What is needed is broad-based experience in voice/data transmission, including LAN's \* x25/x75 \* synchronous/bi-synch protocols/CCITT standards.

Excellent prospects in an attractive location for high profile positions.

### TECHNICAL DEVELOPMENT/SUPPORT

to £14000 neg.

New product development by a major manufacturer leads to creative, state-of-the-art career openings. Overseas travel, customer liaison and broad contacts feature in taking products from design through to production.

Your experience in a communications environment could include \* manufacturing \* design (modern/analogue/digital/mpu) \* technical support.

Excellent career prospects in a dynamic team.

Contact Ivor Harland.

To discuss your specialist action call Windsor (07535) 56155 (8.30 a.m.-6.30 p.m.) or write to us at Kramer Westfield Associates Ltd, 23 Victoria Street, Windsor, Berkshire, SL4 1HE. Our career opportunities are equally open to men and women.

*Kramer Westfield*

Telephone 01-373 3063

## Scientific Progs/Designers

E.E.C.: Pkg to £16K

A leading international Systems House and Consultancy currently requires additional Scientific Programmers and Software Designers for permanent career positions in Holland and Germany. Suitable applicants will be graduates with between two and five years' industrial experience in a real-time microcomputer or microprocessor environment. Your programming skills should include fluency in at least one high-level language preferably FORTRAN, COBOL or PASCAL and, additionally, in Assembly. Particular hardware experience is not important, but knowledge of PDP-11 VAX, CIL minis or Motorola 68000 would be a distinct advantage. For the Software Designer positions, applicants will be expected to offer knowledge of Data Structures, algorithms, and programming skills should include fluency in at least one high-level language.

## C & UNIX Programmers

London: Salaries to £10K

A highly respected Product Supplier is currently seeking to recruit several Systems and Applications Programmers to work on its UNIX-based range of products. Applicants, aged 22-26 years, should have graduated since 1980 with a good class honours degree in a computer science or related subject, with commercial or industrial experience. Very recent M.Sc. or Ph.D. candidates are also encouraged to apply, particularly if their chosen subject matter was directly concerned with UNIX systems software. It is advantageous to be fluent in C programming language and also offer PASCAL as a secondary language. Whilst the majority of programming work is undertaken in-house, candidates will be expected to work on clients' sites both before and during the implementation phase.

## Systems Designers Project Ldrs./Programmers

Southern Home Counties: Salaries to £15K

Our Client is a Systems and Software House with a well-deserved reputation for developing software and systems, engineered and packaged to the highest standards. A series of newly-won contracts has given rise to a number of vacancies for Systems Software Professionals able to deliver elegant and efficient solutions to extremely challenging problems.

For all applicants a good Honours Degree in Computer Science or a related discipline, supplemented by at least two years' experience in an industrial real-time environment is an essential requirement. Such experience will preferably include participation in the design and implementation of complex technical or systems software. Specific language skills should include fluency in FORTRAN and PASCAL, C or ALGOL supported by substantial Assembly usage. Candidates for the more senior positions must be able to show that they have the ability to lead a small team of Programmers and Designers through all phases of a Project from original Outline Specification to implementation and customer acceptance.

Current applications areas include communications networks, interactive terminal systems, graphics and on-line reservation systems. Experience in any of these fields will, therefore, be welcomed and will attract a salary premium.

Individuals who feel they meet the stringent requirements outlined above should either forward a well-documented resume to our Offices or telephone one of our Consultants quoting Ref: AS/1.

## Operational Analysts

London: Salary to £13.5K

A number of Operational Analysts are required by this London based Consultancy. Academically, you should hold at least a first or second class B.Sc. Degree in Mathematics, Physics or Statistics. An M.Sc. or Ph.D. in Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas: war gaming and scenario studies, mathematical programming and analytical modelling, navigation systems assessments, reliability studies and data reduction. An important feature of these positions is the ability to communicate software and O.R. techniques to non-technically minded personnel. There will also be a degree of travel to clients' sites.

Ref: L/18/C

## Software Development

Berkshire: Salaries to £14K

An international manufacturer and supplier of hardware and turnkey systems has budgeted to augment significantly its professional and technical personnel during 1983. Consequently, a number of outstanding opportunities exist for Software Development Engineers and Systems Implementation Consultants. Your academic and work experience must include a good class B.Sc. degree and at least 18 months' software engineering experience where office automation products are under development. In particular, your software and systems skills must have been acquired within the following areas of activity: man/machine interfacing, local and wide area networks, word processing, and electronic mail/filing applications. Programming skills should preferably include fluency in a high level block structured language and an Assembly as a secondary skill.

Ref: L/18/D

## Expert Systems

Thames Valley: Salaries to £14K

Our Client's Research Centre, established in 1978, has recently taken additional personnel in the Reading area. An immediate requirement exists for personnel to participate in the development of the Company's range of products and services. You are probably employed as a Systems Programmer, Designer or Consultant and have a minimum of B.Sc. degree in a numerical subject. Those who hold an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with some relevant industrial or commercial exposure. The Company's specialist areas of activity demand that all potential employees have an in-depth knowledge of two or more of: artificial intelligence, cybernetics, knowledge engineering, robotics, process and control engineering.

Ref: L/18/E

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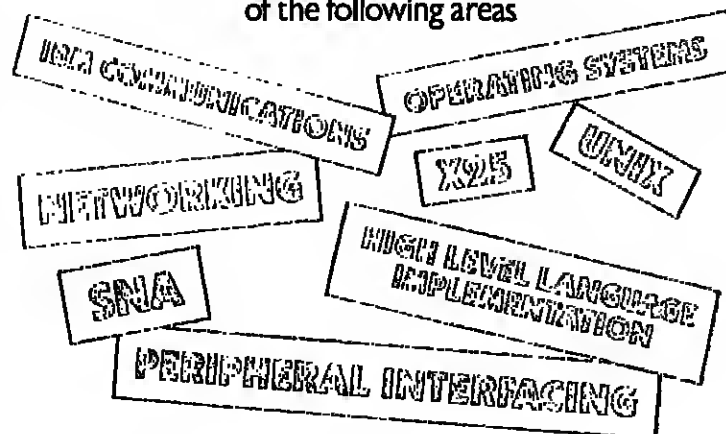


# Hardware and Software Development Hertfordshire

This is your opportunity to join one of the industry's success stories. As part of a \$3 billion turnover multinational corporation, their commitment to research and development in Telecommunications, Distributed Data Processing and Electronic Office Systems is assured. Innovative thinking, coupled with a sound marketing policy for their state of the art products, has created considerable expansion in the areas of hardware and software development. You will be working in a progressive and highly stimulating environment, where career opportunities can be realised together with all the benefits expected of a major company, including relocation assistance. Interested? Then ring **Barbara Basquill** on the office number or alternatively call her on **0787 237116** outside working hours for a confidential discussion and an immediate interview.

**Development Programmers**  
**Designers**  
**Project Leaders**  
**Team Leaders**  
**Diagnostic Programmers**  
**Support Engineers**

with experience in one or more of the following areas



**WARWICK WOODWARD**  A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET, LONDON W1V 7PA  
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

## SENIOR ANALYST/PROGRAMMERS £12,500 BURROUGHS/FINANCIAL

Due to internal promotion this C. London-based financial concern requires an experienced Analyst/Programmer. Applicants should have four-five years' DP experience which must include exposure to either financial applications or Burroughs systems and software. The successful candidate will have leadership potential as career progression is assured. As well as an excellent starting salary, a full range of banking benefits is offered.

## ANALYST/PROGRAMMERS to £11,500 BURROUGHS COBOL

C. London-based company is currently seeking Analyst/Programmers at various levels to complement their successful team. Applicants should have a minimum of 18 months' COBOL, preferably gained on BURROUGHS CMS systems, however a good financial/commercial background will be considered. Candidates can expect a good deal of client contact and must therefore be professional in appearance and attitude. Good prospects and working conditions.

## SALES SUPPORT £NEG + CAR C. LONDON

Two well-known manufacturers require experienced DP personnel to join their sales support teams. There are both junior and senior positions available. For the junior posts, applicants should have around 18 months' commercial programming experience and have the desire to move into a sales-oriented role. The senior positions demand that candidates have a sound DP background to include some sales support experience. Both companies offer excellent packages and career prospects.

## PROGRAMMERS COBOL £9,500 + Mort.

A well-known bank based in the City is currently expanding its systems development division and wishes to recruit programmers with at least one year's COBOL, preferably in an IBM online environment. They will offer full training in Banking discipline and CICS where necessary. The career path will involve quick progression through to systems. Standard banking benefits apply to include a subsidised mortgage.

## ANALYST/PROGRAMMER RPGII £10,500

Management services division of a major manufacturing concern has a vacancy for an experienced analyst/programmer. Candidates should have a minimum of two years' RPGII programming in System three or 34 background (any 38 experience would be of special interest). Good User skills are essential since applicants will be communicating with business users who have little technical knowledge. This position is based in West London.

## PROGRAMMER RPGIII TRAINING £8,750

North Surrey-based company has identified a requirement for an RPG programmer. They are an established 38-user and have the in-house expertise to give full 38 training to existing RPG programmers. The minimum requirement is at least one-and-a-half years' RPGII, preferably from a 34-environment. As well as full RPGIII training, the client encourages early exposure to systems.

## ANALYST/PROGRAMMERS VAX/PDP to £13,000

An International Software House has vacancies at several levels up to Project Leader status for persons with proven financial banking systems development experience. They require a programming background that includes BASIC or COBOL gained in a DEC environment. In return they can offer the opportunity to be involved in the development and implementation of sophisticated banking systems based on the latest VAX and PDP equipment for a rapidly expanding client base and will reward appropriately.

## SENIOR ANALYST ICL/BANKING £NEG

A City-based merchant bank, utilising large ICL 2900 equipment for major systems development, requires an experienced Analyst for 'front line' project work. Ideally, candidates will have around two or more years' formal analysis behind them, gained in a financial environment. Any financial modelling experience would be of special interest. Salary offered will be entirely relevant to experience and full banking benefits, including mortgage subsidy are available.

## ANALYST/PROGRAMMER RSX11M to £12,000 + Mort.

A major International bank requires a further Analyst/Programmer to augment their support team. They are seeking persons with two or more years' RSX11M experience and a good working knowledge of MACRO11. Any exposure to datacomms would be advantageous. Departmental expansion offers excellent career prospects rewarded by a negotiable salary and supplemented by a full banking benefits package, including relocation where necessary.

404 4821

**Apex**

**Apex Computer Recruitment Ltd.**  
London Office: 59 Gays Inn Road, London WC1X 8TL Tel: 01-404 4821.  
Brussels Office: Rue Goffi de Gaimard, 24, Uccle 1180 Brussels. Tel: 010 322 377 4193.

# Developments taking place behind these walls could significantly affect your career if you're interested in data communications.



A whole range of new product ideas are under wraps at CASE, so far in advance of any systems currently available, that we are confident of maintaining our pre-eminent market position. To speed up progress, and explore other areas of potential interest to our company, we are expanding our research and development activity. We currently have openings for **Real Time Programmers, Microprocessor Design Engineers and Technologists** to advance their careers in the following specialisations:

**Digital Voice**  
**Statistical Multiplexing**  
**Communication Processors**  
**Network Management Systems**  
**Technology Studies**  
**Mainframe Protocols.**  
**X25, PAD, X121**  
**Local Area Networks**

If you think that you could contribute to our programme, and you've already gained valuable experience in a related field, we have many advantages to offer you which can't be matched by our competitors. Let us convince you of this. Come to one of the open interview sessions we're holding soon, to discuss our opportunities over a drink.

## OPEN EVENINGS

### CASE PLC

Caxton Way, Watford  
Business Park, Watford.

OPEN DOORS: 4.00pm to 8.00pm  
WEDNESDAY 11th May

### HEMEL HEMPSTEAD

Hemel Hempstead Moat House  
Hotel, Willow Suite,  
London Road (A41),  
Bourne End, Hemel Hempstead.

4.00pm to 8.00pm  
TUESDAY 10th May

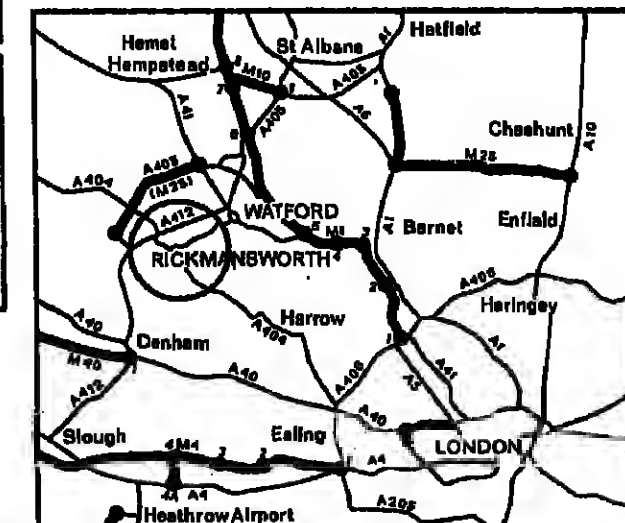
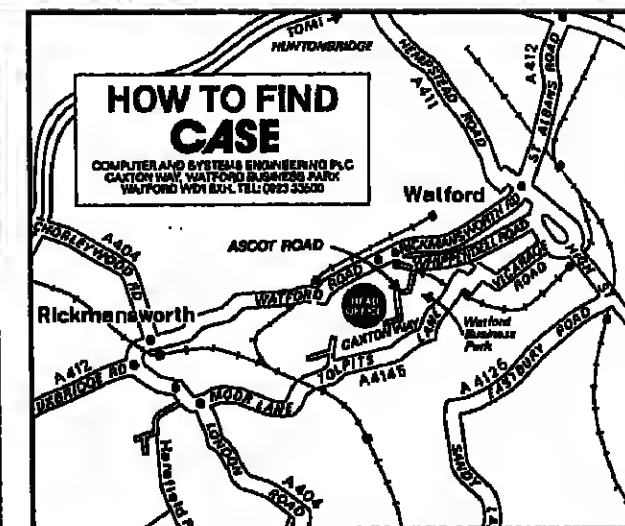
### HEATHROW

The Excelor Heathrow Hotel,  
Ambassador Suite,  
Bath Road (A4), (opposite  
Heathrow Airport).

4.00pm to 8.00pm  
MONDAY 9th May

An informal discussion can lose you nothing; a lost opportunity is something you may regret. If you're unable to come and meet us, telephone or write to Maureen Greaves, Personnel Manager:

**Computer and Systems Engineering PLC, Caxton Way, Watford Business Park, Watford, Hertfordshire WD1 8XH. Tel: (0923) 33500.**



**CASE**

Apex 150



## Consultants Analysts and Programmers

London & Berks  
To £15,000

USA  
To \$35,000

Our client, a growing force within the systems and software industry on both sides of the Atlantic, is recognised by the world's major hardware manufacturers as one of the most progressive and professional organisations of its kind.

They currently need to recruit high-calibre people from programmer, analyst to consultant level who will make a positive contribution to their future growth.

Enthusiastic, self-motivated, with a good academic background, you must have at least two years' financial commercial programming experience, preferably with involvement in systems design and implementation. For the senior appointments, a sound knowledge of insurance related systems is essential.

The Company has a policy of providing a continuous programme of career development with regular training and promotion reviews.

For further information telephone or write in strictest confidence quoting ref. no. PC/6345.

**Lloyd Chapman  
Associates**  
123, New Bond Street, London WY1R 0L 499 7761

## Applied Mathematician

for advanced bridge investigations.

An integral part of the CSIR located on a park-like campus in Pretoria, the National Institute for Transport and Road Research (NITRR) undertakes research programs to find practical solutions to a wide spectrum of problems experienced by all sectors in South Africa in their efforts to finance, plan, design, build and maintain transport systems.

We now seek an Applied Mathematician for a post within our Bridges Group to assist in the extension of our finite element and other programs for bridge design/analysis purposes. These tasks will include the development and application of structural programs on mainframes and minis with the emphasis on interactive mode and computer graphics, involving close collaboration with other engineers.

You should possess a BSc. (Hons.) degree in Applied Mathematics or Computer Science. As a Cypher 750 mainframe and an HP System 1000 mini are constantly utilised, you should also possess a minimum of one year's Fortran programming experience (preferably in bridge design or structural engineering) while any statistics,

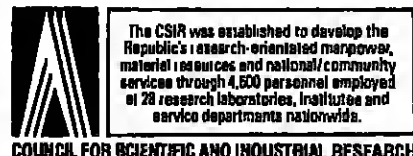
computer graphics and interactive operation know-how is highly desirable.

In return the NITRR offers either a 3-year contract (renewable) or permanent post and negotiable salary which, together with South Africa's very high standard of living and the following benefits, constitute an excellent package:

- free air passages to/from the Republic
- assistance with removal costs
- settling-in allowance
- subsidised housing loan repayment, where appropriate
- house purchase scheme after one year's service
- annual bonus (13th cheque)
- medical aid, pension/life cover scheme
- outstanding schooling, shopping and in-house sports/recreation facilities.

Please send comprehensive personal and career details, including phone number, to: The Scientific Counselor, Chichester House, 278 High Holborn, London WC1V 7HE, quoting reference 11/1/1007 clearly on your envelope.

All interviews will be conducted in the UK soon. This vacancy is open to members of both sexes regardless of colour, race or creed.



The CSIR was established to develop the Republic's research-oriented manpower, material resources and national community services through 4,000 personnel employed at 28 research laboratories, institutes and service departments nationwide.

### UNIVERSITY OF GLASGOW

- (1) CHAIR IN ELECTRONIC SYSTEMS
- (2) SECOND CHAIR OF COMPUTING SCIENCE

Applications are invited for two new Chairs as follows:

- (1) DEPARTMENT OF ELECTRONICS AND ELECTRICAL ENGINEERING

The successful applicant will be expected to provide academic leadership in research and teaching in Electronic Systems including the introduction of a proposed new Honours Degree Structure in Electronic Systems and Microcomputer Engineering.

The applicant should have worked in Digital Electronic Systems and be conversant with the application of Microcomputers as an integral part of engineering systems; a background of industrial collaboration would be an advantage. The Department has an established reputation for research in the industrial applications of Microcomputing Systems, Control Systems and Pattern Recognition, Integrated Optics and Optical Communications. The person appointed would be expected to complement these activities. (Ref. No. 7873P).

- (2) DEPARTMENT OF COMPUTING SCIENCE

The successful applicant will be expected to have experience in some area of computer systems design and implementation. The Department has special interests in software engineering and computer graphics and it is hoped that the applicant will have interests in one of these topics or in a related computer systems area such as distributed processing, process communication or computer architecture. (Ref. No. 7874P).

The appointments will be tenable from 1st October, 1983, or other mutually convenient date. Further particulars of each post may be obtained from the Secretary of the University Court (Room 181, University of Glasgow, Glasgow G12 8QQ) with whom applications (15 copies; one copy from overseas applicants should be lodged on or before 27th May, 1983. The names of three referees should be given. In reply please quote the relevant Ref. No. (3801)

## NORTH EAST DARLINGTON

Our client, a major manufacturing organisation, is committed to using the latest IBM technology. The Company is soon to upgrade its IBM 4341 running under OS/VS1 with CICS and DLI and a significant expansion of the Computer Services Department is planned. They require:

### SENIOR SYSTEMS ANALYSTS

To £11,000

These posts offer ambitious analysts the opportunity to broaden their experience with involvement in considerable areas of new development work including both local and remote applications. Projects include Manufacturing, Stock Allocation and Warehouse Distribution Systems and the successful candidate will have at least two years systems experience together with the ability to succeed in a highly challenging environment.

### PROGRAMMERS

To £9,000

These posts must appeal to ambitious programmers with at least two years' COBOL programming experience. Career prospects are excellent, offering successful candidates the opportunity to develop their experience in an IBM environment using many of the latest hardware and software aids available.

The company's investment in computing is considerable and increasing and conditions of employment are in line with a highly progressive organisation. Salaries and benefits are first class with generous relocation expenses where appropriate.

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Leeds	£8,000 - £10,000	Private Medical Insurance
Liverpool	£8,000 - £10,000	Private Medical Insurance
Newcastle	£8,000 - £10,000	Private Medical Insurance
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Enquiries will be treated in the strictest confidence. Envelopes should be marked "Staff Confidential".



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# RPG II Programmer/Analyst

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In addition to providing a stimulating and satisfying career path, our Client offers an above average working environment, including superbly equipped office accommodation, subsidised staff restaurant, a generous bonus scheme, Company pension scheme with free life assurance and attractive discounts on Company products. Assistance with relocation expenses may also be available, where required.

If you are an experienced RPG II Programmer and seek something rather special in your next move, contact **Carl Ford** on 021-236 3781 (24 hour answering service). Alternatively, contact Carl at home on 0562 66585 (Evenings until 9.00 pm and Weekends).

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THE CONTRACT STAFF  
RECRUITMENT FEATURE

APPEARS ON PAGES 22 & 23

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The company recognises the importance of this position and is prepared to offer an attractive salary and an unusual benefits package, plus the satisfaction of working in a small, high technology company.

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These opportunities are with a fast growing Division in the field of structured real time systems. The post carries the usual benefits including non-contributory pension and life assurance etc.

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The successful candidate would join a small but active team that has been developing a strong base of capability in the microprocessor control of electrohydraulic and electrical interface devices for applying power to a variety of mechanisms.

One aspect of the work would be of interest to Control Engineers or to either Mechanical or Electrical Engineers who would like to widen their experience into digital control systems; the other aspect of the work would be of interest to engineers or physicists with a background of computers or microprocessors, or to computer scientists, wishing to work on advanced software for the future control of machinery.

Candidates should normally be aged 35 years or under; the appointment will be for a period of three years initially with the possibility of renewal or subsequent transfer to a continuing appointment. Initial salary will be within and up to the maximum of the range £6,375 p.a. to £13,505 p.a.

Application forms and further particulars may be obtained from the Staff Officer (quoting Reference No. 552/102), University of Aston in Birmingham, Gosta Green, Birmingham B4 7ET (Tel. 021-359 3611, ext. 4566). Closing date: 3rd June 1983.

## GLC

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## - South Bank Concert Halls - Computer Project Manager

This is a new post, initially to run for eight months, for a Computer Project Manager to investigate and report on the feasibility of a computerised system for the South Bank and related financial and other key functions within the South Bank Concert Halls.

Salary will be within the range £11,880-£13,353, inclusive of London weighting and depending upon qualifications and experience, pro-rata for 8 months.

We welcome applications from disabled people and all sections of the community irrespective of an individual's sex, ethnic origin, colour or sexual orientation.

For further details and an application form, which must be returned by 21st May 1983, write to the Department for Recruitment and the Arts Unit, Greater London Council, The Connaught Hotel, London SW1 7PB, or telephone 01-535 4672.

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## APPLICATION PROGRAMMER

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This is an excellent opportunity to use both technical programming and analytical skills with user contact. Your responsibilities will

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If you would like further information about this excellent opportunity telephone Mr. Mike Harmon on Marlow (06284) 6021 or write for an application form to

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Personnel Department,  
Carnation Limited,  
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Marlow,  
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Closing date for completed applications:-  
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## Head of Computing

c£16,000  
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UNITED KINGDOM CENTRAL COUNCIL  
for Nursing, Midwifery and Health Visitors

Our clients are the United Kingdom Central Council for Nursing, Midwifery and Health Visiting: they are looking to fill the vitally important position of Head of Computing within a newly created department. The UKCC and the four National Boards of England, Wales, Scotland and Northern Ireland are embarking on the computerisation of a single professional register and index of persons in training which will be the largest system of its kind in the world.

The person will be highly influential in the formulation and implementation of computing policy for the UKCC and the Boards and this will require the following personal and technical attributes.

- \* Control ability for a major project
- \* Proven man-management ability
- \* Demonstrable skills in broad management techniques
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- \* A successful career record of similar achievement

The technical environment at UKCC is IBM 3083B and NAS 240H running under MVS operating under VM. COBOL is used extensively and ADABAS provides the database management software. NATURAL is also used in connection with the database, which will be on-line via VDUs. The development is still in its infancy and there is considerable scope for the right individual in an exceptionally interesting position within the organisation.

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LOCATION: WEST MIDDLESEX

JAS19/1

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- ★ IBM MAINFRAME
- ★ VM/CMS and DOS/VSE
- ★ COBOL
- ★ ON-LINE DATABASES and TELECOMMUNICATIONS

In return, the company offers outstanding opportunities for career development, excellent salaries and a comprehensive range of benefits which will include a generous relocation package.

LOCATION: HAMPSHIRE

JAS19/2

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LOCATION: WEST MIDDLESEX

JAS19/3

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Situated in pleasant office accommodation in Enfield, we are able to offer positions to Systems Analysts with a minimum of eighteen months experience. Candidates should have a suitable background which will enable them to work on a variety of commercial systems within a mainly Honeywell environment (DP88/DP86), but also utilising various micro-computers.

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JAS19/4

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21/1/83



# IBM Database Specialists

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- A sound COBOL programming background
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- Some experience in a DOS/VSE environment
- The ability to liaise effectively at all levels
- The ability to both manage and motivate a small team

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### DATA GENERAL PROGRAMMERS

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This well-known financial company has two vacancies, for self-motivated people with a minimum of 2 years programming experience, in their progressive D.P. Department. Preference will be given to applicants with degrees and who have experience in COBOL, FORTRAN OR PLI. Some exposure to analysis and mini-computers will be considered advantageous. J.7278

### DEC SENIOR ANALYST

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### WANG PROGRAMMERS

**LONDON** **£8-10,000**  
A programmer and a senior programmer with 2/3 years RPG and 3/4 years COBOL experience respectively, are required by a North London company. Experience of Wang equipment is highly desirable along with a general commercial applications background. Applicants with other mini-computer experience will be considered. J.7285

### C.M.C. ANALYST/PROGRAMMERS

**LONDON** **UP TO £9,000**  
This company wishes to recruit 2 analyst/programmers ideally with C.M.C. reality experience, however candidates with other programming experience using micros. Knowledge of Micro-Modeller, Visiolec, Supercalc and Data Base II and/or some accountancy training will be considered advantageous. J.7287

### PROGRAMMER

**LONDON** **UP TO £10,000**  
This prestigious company has a current vacancy for a programmer with a minimum of two years BASIC or PASCAL programming experience using micros. Knowledge of Micro-Modeller, Visiolec, Supercalc and Data Base II and/or some accountancy training will be considered advantageous. J.7286

### PROGRAMMER

**SURREY** **UP TO £12,000**  
This well-known company requires a programmer with good all-round programming experience on Minis/Micros using COBOL or BASIC. A background in communications would be considered advantageous. This position would ideally suit someone in their mid-20's who enjoys user contact. J.7274

### VAX PROGRAMMERS AND ANALYST/PROGRAMMERS

**LONDON** **£8-12,000**  
Various vacancies exist with this company for people with VAX COBOL experience of which 2 years should have been gained in a commercial environment. Knowledge of Datatova, Info, F.M.S. and Fortran is highly desirable. J.7282

### IBM SENIOR SYSTEMS ANALYST

**BERKSHIRE** **£11,500**  
Large company requires an analyst with a minimum of 5 years experience, with a good knowledge of CIS working under DOS/VSE. Normal benefits of large company, profit sharing bonus, subsidised restaurant. R.7273

### IBM SENIOR SYSTEMS PROGRAMMER

**HERTFORDSHIRE** **£20,000**  
Expanding organisation situated close to London has a vacancy for someone with the following experience. Assembler, in-depth knowledge of MVS, CICS, IMS, C11ST, TSO tuning and performance analysis. R.7226

### IBM SYSTEMS DESIGNER

**NORFOLK** **£12,000-£15,000**  
A very interesting position for an experienced Systems Designer to take full responsibility for all stages of systems analysis, design and implementation. Minimum 4 years experience, programming in COBOL and BASIC. R.7286

### IBM COBOL PROGRAMMERS

**VARIOUS** **£8,000-£11,000**  
A large bureau are looking for a variety of programmers to work in London and the Home Counties. Applicants must have a minimum of 2 years COBOL experience and a good background in Database and Online systems. R.7278

### ANALYST/PROGRAMMER

**SURREY** **£NEG.**  
Large international company require an analyst/programmer to join a small development team, working on general commercial applications. The minimum requirement is 18 months System 38 and RPG III experience. Capable programmers will be considered for this vacancy. A very attractive package is on offer for the successful applicant. R.7244

### IBM SENIOR PROGRAMMERS

**CENTRAL LONDON** **£8,000-£11,000**  
A major international banking organisation require two senior programmers to join a small development team, currently implementing a batch information system. Plans for the future will involve the introduction of an on-line system. Minimum 3 years DOS/COBOL/DLI. Usual banking benefits. R.7280

### IBM PROGRAMMERS AND ANALYST/PROGRAMMERS

**S. LONDON** **£8,000-£12,000**  
A large engineering company requires a number of programmers and analysts with varying experience in COBOL, running under MVS/JES 2, utilising ROSCOE, LIBRARIAN, EASYTRIEVE, MARK IV and CICS. Usual benefits associated with large companies. R.7280

### ICL SYSTEMS ANALYST

**W. LONDON** **TO £11,000**  
Well known company are seeking an experienced Systems Analyst to take a major role within the organisation. The successful applicant will have at least 3 years experience and a knowledge of Payroll and Personnel Systems would be a distinct advantage. G.7228

### TANDEM PROGRAMMER

**LONDON** **£10,000**  
Financial organisation based in the City wish to recruit an experienced TANDEM Programmer to work in a progressive environment as part of a newly formed team. The position carries considerable bonus and a competitive salary is offered to the right individual. G.7112

### BURROUGHS PROGRAMMER

**LONDON** **£8,000-£9,000**  
Prestigious West End company is looking for experienced Burroughs people fully conversant with DMS II. Excellent company benefits include BUPA, Interest Free Season Ticket Loan and Contributory Pension. G.7162

### ICL SYSTEMS PROGRAMMER

**W. LONDON** **£10,000**  
Company with a well known High Street name for supplying luxury goods are looking for an experienced Systems Programmer to develop and maintain the company's computer based administrative systems. Preferably educated to 'A' level standard thought person will enjoy an attractive salary. G.7180

### ICL SYSTEMS ANALYST

**SURREY** **£10,000-£11,000**  
A Systems Analyst with at least 4 years experience sought by this organisation. Sound knowledge of Pension systems would be a distinct advantage, however, applicants with a Financial, Accounting background would be considered. G.7281

### HONEYWELL SENIOR PROGRAMMER

**MIDDLESEX** **£9,250**  
Large well-known organisation wishes to recruit a senior programmer with in-depth knowledge of Honeywell Level 6. A background of production control systems would be a considerable advantage. G.7168

### HONEYWELL ANALYST PROGRAMMER

**LONDON** **£8,000-£11,000**  
An experienced analyst programmer is required by this company to work on Commercial and Banking applications. SCREENWRITE is essential as is an excellent knowledge of Honeywell Level 6, GCOS. G.7081

### UNIVAC PROGRAMMERS

**W. LONDON** **£10,000-£13,000**  
Experienced UNIVAC PROGRAMMERS to work on a variety of projects within a progressive environment. Two years detailed knowledge of COBOL and Database will give the successful applicant a competitive salary and the opportunity to work in a fast moving atmosphere. G.8878

FOR FURTHER INFORMATION, PLEASE TELEPHONE 01-439 7871

## CONTRACTS

### IBM

PL/I, CICS

Swift

Cobol, DDS/VSE, CICS

System 38, RPG III

Any BSD + Insurance

Cobol, CICS, DL/I

PL/I, IMS DB/DC

System 34 + 38

Cobol, IMS DB/DC

Cobol + Assembler + On-line

IMS/MVS

ICL

ME29, Cobol, IDMS

VME 2800, Cobol, IDMSX SCL

VME/B, Cobol, IDMS

DRS, CICS Cobol/Assembler

Analyst

Analyst/Consultant

Analyst/Programmers

Analyst/Programmers

Analyst

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

Analyst/Programmers

London

London

Essex

Various

Middlesex

West

London

Various

Various

London

West

West

West

West

West

West

West

West

West

### OTHERS

CIS, Cobol + Accounts

CPM, MBASIC

T1980 Cobol

B800, LINC

Z80, Basic + Assembler

HP 3000, Image, View/Query

VAX 11/750, RMS, Cobol, DBMS

VAX 11/780, VMS, Basic/Cobol

VAX 11/780, VMS, Cobol System

Datapoint Programmers Urgently Required

PDP, RSX 11M, Micro 11

B6600, DMS2, GMCDs

Technical Authors

TANDAM T16 TAL

Univac 90/30, Cobol, TIPS

NCR, NEAT.3, Level 2

Various

Various

Various

Analyst/Programmers

Programmers

Programmer

Analyst/Programmer

Programmers

Analyst/Programmers

Analyst/Programmers

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Analyst/Programmers

Analyst/Programmers

Various

London

Surrey

France

London

Berkshire

Bucks

Surrey

Surrey

Middlesex

Barks

Surrey

Barks & Herts

London

London

Berkshire

Berkshire

Berkshire

Berkshire

Berkshire

**datascene**

**Datascene International Limited**

Scaple House, 169-173 Regent Street London W1R 7FB

Telephone: 01-439-7871 Telex: 25851

London & Counties  
Computing  
Society  
Association

01-439 7871



## your appointments register

### Programmers

NCR/IBM/COBOL to £15K  
Insurance Banking London H. Counties N. Eng.

COBOL/PL1/OS/CICS/IMS to £13K  
Commercial H. Counties Midlands Manchester

ICL/ON-LINE EXP to £12K  
COBOL Surrey

HONEYWELL to £12K  
Systems Programming experience Middlesex

DATA GENERAL ECLIPSE to £11K  
Cobol Leicestershire

IBM/CP2 to £12K  
Financial/Insurance Home Counties

IBM to £16K  
System exp Essex

BASIC to £11K  
Mini Computers London

IBM/UNIVAC/COBOL to £12K  
On-line/Database Surrey

NCR 8200 to £14K  
Financial SW LONDON

### Analyst/Progs

BURROUGHS/COBOL to £14K  
Commercial Surrey

IBM 34/38 to £15K  
London/Home Counties/North

DATA GENERAL/COBOL to £11K  
Commercial Mini experience London

IBM/COBOL to £10K  
Scotland

### Hardware/Support

APPLICATIONS ENGINEER to £15K  
Peripherals Support/Microprocessor Systems London plus International Travel

SERVICE ENGINEER to £20K  
DEC/VARIOUS MINIS Middle East

TECHNICAL MANAGER to £15K  
Disk Drive Technology Sheffield

TECHNICAL AUTHORS to £ Neg.  
UK + Europe

CAD/CAM/GRAPHICS to £15K  
Home Counties

ENGINEERS to £15K  
Torch Micro/Networking London

You can be sure of hearing about many opportunities like these, U.K. and abroad, when you make Sloangate your first choice. Take the next step in your career with us!

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**Sloangate**  
The Appointments Register

### Systems Analysts

IBM/ICL to £12K  
Stock Control/Commodity Control London

CAD/CAM to £16K  
Real time Modelling Man. Essex South West

IBM/BURROUGHS to £15K  
Commercial Accountancy London/Surrey/Manchester

IBM SYSTEM 34/38 to £13K  
Mespica/Rpg Sussex

ICL/ME29 to £16K  
Commercial Design Berks.

IBM SYSTEM 34/38 MAAPICS to £13K  
Sussex

### Software Engineers

CORAL/PASCAL/MASCOT/C to £13K  
Communications Gloucestershire/Sussex/Middlesex/Manchester

FORTRAN to £12K  
Finite Element/Graphic Display Home Counties

MILITARY SYSTEMS/RADAR to £11K  
Corel Mascal Hants/Surrey Essex S. West

PDP/VAX/INTEL to £13K  
Telecomms ATE Surrey/London/Kent

COMMS/TELECOMS/MOD to £14K  
Mini/Mainframe E. Angles

HP3000/INTEL to £12K  
CAD/CAM/ATE Home Counties

TERMINAL EMULATORS to £15K  
C/Assembler London

### Snr Appointments

PROJECT LEADER to £15K  
Military Systems Berks/Hants

SALES EXECUTIVES to £25K  
Micros - Minis Peripherals, etc UK & Overseas

CONSULTANT to £15K  
Military/Defence Berks

SYSTEM PROGRAMMING to £15K  
Digital/RSTS/E, BASIC Bucks

TEAM MANAGER to £17K  
Computer Modelling/Fluid Flow S. London

ICL/PRE- AND POST-SALES SUPPORT to £16K  
Berks.

SENIOR SOFTWARE ENGINEER to £18K  
Software capabilities/Technical consultant E. Angles

# Outstanding programming opportunities with Acornsoft

- the software publishing division of Acorn Computers.

We are looking for exceptional programmers to join our rapidly expanding Language Development team in the areas of Systems and Artificial Intelligence. Work will be carried out on 8-bit and, later, on 32-bit microcomputers.

Applicants, ideally with a post-graduate degree, should have had about two years' research experience in systems programming.

The ability to work on a variety of different projects, both

individually and as part of a team, is needed and a knowledge of at least one of the following is essential: Fortran, Prolog, Small Talk, BCPL.

A first-rate, negotiable salary, together with an attractive range of benefits is offered and opportunities for career progression are excellent.

Please write, enclosing a C.V. to: Deborah McGovern, Personnel Officer, Acornsoft Ltd., 4a Market Hill, Cambridge, CB2 3NJ.

## ACORNSOFT

### EALING COLLEGE OF HIGHER EDUCATION School of Economics and Accounting LII IN COMPUTING STUDIES

Able to teach on B.A. Accounting Studies and B.A. Economics with other courses mainly at undergraduate level. Applicants should be graduates; formal qualifications in computing, teaching experience and business experience would each be considered an advantage. The college is particularly interested in candidates with knowledge in the areas of accounting and data processing.

The post is tenable from 1st September 1983.

Salary: LII £7,794 to £11,961 per annum (London weighting). Starting point on grade determined by qualifications and experience.

Application forms and further details from The Chief Administrative Officer (T/O), Ealing College of Higher Education, St Mary's Road, London, W5 6RF.

(3497)

### QUEEN ELIZABETH COLLEGE Kensington (University of London) COMPUTER ASSISTED LEARNING OFFICER (Further advertisement)

Required as soon as possible. Responsibilities include supervision of Physics/Computer Science CAL Laboratory, adaptation of CAL packages, and development of new packages. Equipment includes 3802a, PETs, Apples and DEC VAX/Gigi terminals. Applicants should be graduates with relevant CAL experience. Appointment is to September 30, 1984 in first instance. Starting salary in range £5,501-£6,800 (rising to £8,085) p.a. plus London Allowance £1,168 p.a.

Further particulars from College Secretary, Queen Elizabeth College, Campden Hill Road, Kensington, London W8 7AH. Closing date May 23, 1983.

### CHIEF OPERATOR CIRCA £8,000

For a mixed installation ICL ME29 CTL 8000 CROMEMCO System 3 ME29 and GEORGE 2 experience essential. Knowledge of Minis and Micros an advantage.

Candidates should have had 4 years' experience, including a senior position within a ME29 installation.

Send full details or apply for an application form to: Mrs J. G. Parr, Personnel Officer, Haden Plc., 7-12 Tavistock Square, London WC1H 9LZ.

(3443)

### ANALYST/PROGRAMMERS CROYDON UP TO £10K

We are an expanding software house with varied and interesting applications who require Analysts/Programmers with a minimum of two years' commercial application experience preferably on mini computers using a high level language.

To join an existing team for projects in the Home Counties. The applicant would be expected to work on own initiative as substantial end-user. Contact, and on-site work is involved. Phone direct on 01-898 5419 and ask for Margaret to discuss your application.

(3508)

### WILTSHIRE CHIPPENHAM TECHNICAL COLLEGE LECTURER II THE COLLEGE SWINDON LECTURER I

required for September, 1983. Lectures in Computer Studies and Data Processing.

The successful candidates will be required to teach a wide range of classes and will be involved in the development of BEC/TEC Computer Studies Courses. Candidates should possess relevant qualifications and experience. Further details obtainable from: The Clerk to the Governors, Chippenham College Tel. (0244) 656011 and LLI, The Principal, The College, Swindon, Wilt. Ref: 100/83/14. Applications will be considered on the basis of the appearance of this advertisement.

(3508)

## Logitix

Logitix Recruitment Limited  
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

### MICROPROCESSOR DEVELOPMENT INDUSTRIAL SYSTEMS

CENTRAL LONDON: Salaries to £15K

PROFILE: A leading Systems Supplier and Consultancy has retained Logitix to assist with the recruitment of a number of Project Leaders, Applications and Systems Programmers. The major areas of activity focus upon the development of multi-microprocessor applications and the design and implementation of real-time industrial and process control systems. The Company is recognised as a market leader in innovative software and system development and provides a well-defined career path for the technically motivated individual who wants to work in a stimulating and challenging environment.

PROJECT LEADERS: Aged around 30 years and with a minimum of seven years' industrial experience, your career to date should preferably have progressed through Designer level to your current position where you have project control responsibilities. Successful candidates are likely to have current relevant experience within microprocessor systems development or the implementation of real-time industrial control and monitoring systems. In addition, you should be able to demonstrate an aptitude for proposal writing and have participated in project costing and resource management. Whilst the majority of project work is located in Central London there will be occasional U.K. site visits.

APPLICATIONS and SYSTEMS PROGRAMMERS: Aged 22-26 years and with a minimum qualification of H.N.D. or B.Sc. and at least one year's industrial or commercial experience. Ideally, you will have some knowledge of Intel microprocessors using PL-M as the principal programming language with PASCAL, a very useful secondary language. However, candidates who are familiar with other microprocessor systems will certainly be considered. For certain positions, it is mandatory to have an in-depth system programming knowledge of Intel's RMX operating systems and development tools. Candidates with an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with relevant practical experience.

BENEFITS: In return for your personal commitment and technical skills the Company offers an excellent salary together with an outstanding range of ancillary benefits.

APPLICATIONS: Please submit a well-documented resume or alternatively telephone one of our Consultants quoting Ref: LJS/3.

Licensed by D.O.E. Lic No. SE 5813

## ANALYST PROGRAMMER

West London neg. around £12,000

The major systems development programme of this fast-growing specialist service organisation - part of the largest US leasing/rental group - calls for the recruitment of a business orientated analyst programmer.

Reporting to the Finance Director you will be responsible for ensuring the smooth installation and implementation of the company's new mini-computer based systems including the selection of relevant software and peripherals. This will involve liaison with all levels of management within the UK and with peer groups in the USA. Applicants should have had at least four years experience and be capable of handling all aspects of creating a DP unit - from systems design through program writing to implementation - and of working closely with external suppliers. Recent experience of DEC equipment, ideally using BASIC under RSTS/E, is essential.

The rewards for this "self-management" will be a high degree of autonomy as well as the opportunity for personal development with a highly profitable service organisation. Salary will be in the region indicated but will not prove an obstacle to the right candidate.

Call David Mason Johns today on 01-848 5922 (24 hour answering service) on 01-747 0989 (evenings and weekends) for an application form, alternatively write to him at the address below. Please quote Ref D8334/CW.

(3557)

Work with the best

## KPG

01-948 5922

KPG Computer Support Services Ltd.  
Cobden House, Park Lane, Richmond, Surrey TW9 2RA

## SYSTEMS CONSULTANT



**Recognition**  
Recognition Equipment Limited

Recognition Equipment, a world leader in the field of data entry systems is seeking to recruit a computer professional to join the U.K. systems support group based in their new headquarters in Windsor.

The successful applicant will provide both pre and post sales support to 'blue-chip' clients on a wide range of highly advanced computer based products. Considerable U.K. travel is envisaged with occasional European and U.S. trips.

Suitable candidates will have at least five years data processing experience including the use of assembler languages. The ability to operate in a client oriented role is obviously essential.

The position offers the opportunity to enjoy a high degree of responsibility within a stimulating and challenging environment.

For further information please telephone Andrew Cousins or write enclosing a full C.V.

## MCL

McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading, Berkshire

Tel: Reading (0734) 595346 (24 hours)

## MAJOR ACCOUNTS MANAGER

BERKSHIRE **ALLOS** c£30k + Car

Our client Altos Computer Systems were formed in 1977 and have shown a spectacular growth to date, with a highly successful range of 8 & 16 bit multi user systems. They are currently trading at levels of 80 million dollars per annum.

In order to sustain this unique growth rate we are now seeking to employ a major accounts manager. Responsibilities will involve the development of existing major accounts but the primary objective will be to generate and grow new business with blue chip companies.

Ideally applicants will be able to demonstrate success in selling mini/mainframe or related hardware products into major accounts. Experience gained with a manufacturer would be particularly relevant.

In return the company offers a ground floor opportunity to join one of the most successful and rapidly expanding (currently producing 1500 units per month) high technology companies in the U.K.

Benefits will include an unusually high base salary, prestige company car, free BUPA and life assurance. The real benefits will derive from working for a company which is already one of the outstanding successes of the 1980's.

For further details telephone or send full C.V. to Barbara Allen to the address below (ref 103).

## MCL

McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading

Tel: Reading (0734) 595346 (24 hours)

01-948 5922



# SYSTEMS AND PROGRAMMING

## CONTRACTS

### LONDON

IBM MVS COBOL & MARK IV PROGRAMMER - MAY/JUNE  
IBM DL/1 COBOL PROGRAMMERS X2 - MAY  
IBM MVS SYSTEMS PROGRAMMERS X2 - MAY  
IBM CICS, DL/1, SYSTEMS PROGRAMMERS X2 - MAY  
IBM DATABASE ADMINISTRATORS DL/1, IMS - MAY  
IBM SYSTEM 34 RPG II MAAPICS PROGRAMMER - URGENT  
D.G. ECLIPSE MV 6000 INFOS AND/OR TPMS COBOL PROGS  
TANDEM COBOL PROGRAMMERS - ASAP  
HP 3000 COBOL PROGRAMMERS - ASAP  
ICL 2900 NETWORK ENGINEER - ASAP  
ICL VMF COBOL, IDMSX PROGRAMMER - ASAP

### MIDDX

IBM SYSTEM 34 RPG II MAAPICS PROGRAMMER - URGENT  
IBM DOS/VSE CICS, DL/1, COBOL ANALYST/PROGRAMMER

### NORTH WEST

IBM OS/MFT PL/1 PROGRAMMERS X2 - URGENT  
IBM DOS/VSE RPG II PROGRAMMER - URGENT

For details of these and other interesting contracts, contact Lorraine Maddison on 01-948 5922 (office hours) or Walton-on-Thames (98) 45552 (evenings/weekends)

## PERMANENT

### CICS, DL/1 PROGRAMMERS

c. £12,000  
One of our clients in MIDDLESEX is urgently looking for skilled PROGRAMMERS with about 4-5 years practical PL/1 or COBOL experience for an exciting new project. Travel and perks.

### SENIOR ANALYST/PROGRAMMER

c. £10,750  
A specialist Software House now needs a graduate person with 3/4 years FORTRAN and BASIC experience. Knowledge of system implementation, model-building and database will help in this communications environment. This installation is based in CENTRAL LONDON.

### SENIOR PROGRAMMER

NEGOTIABLE  
IBM SERIES 1 installation need an experienced RPS person with a background of PL/1 or ASSEMBLER. This Process Control application will offer both technical and programming opportunities. A relocation package is available for this WEST LONDON installation.

### SENIOR PROGRAMMER

£10,000 + CAR  
This large finance house in MANCHESTER has recently upgraded to IBM 4331 from GSD and need to recruit a RPG II PROGRAMMER. Previous experience of Financial applications is essential and COBOL or PL/1 as a second language.

### COBOL PROGRAMMER

to £8,000  
2 years programming experience will qualify you to join this Company based in the CITY. You will be part of a project team concentrating on batch systems on a IBM 4341 under VM/SP using DOS/VSE, CICS/VS. The benefits include a non-contrib. pension and a mortgage subsidy.

### IBM SYSTEMS PROGRAMMER

c. £17,000  
A really experienced CICS, DL/1 person is urgently required for this WEST LONDON site. There are many opportunities to use your skills in this large VM/DOS/VSE installation. Overseas travel to other sites will be required and the rewards are very good.

Please contact DAVID or KEITH at KPG or on 01-747 0869 or 01-399 8163 during the evenings or weekends.

Work with the best

**KPG**  
01-948 5922

KPG Computer Support Services Ltd.  
Cobden House, Park Lane  
Richmond, Surrey TW9 2RA



# ANALYSTS & PROGRAMMERS

## CICS TRAINING

CITY £9,500  
Two years' IBM COBOL programming experience is all you need to join this major financial establishment based in the City. An INSURANCE or FINANCIAL background would be an advantage, as would any experience of CICS or DL/1, although training will be given where necessary. Company benefits are excellent and include a SUBSIDISED MORTGAGE (after qualifying period), free life assurance, L.V.s and flexitime.

## RPG III TRAINING

SURREY £11,000  
This is a gilt-edged opportunity for experienced RPG II Programmer/Analysts who are looking for their next career move. Ideally you will have been programming for at least 18 months and had a limited exposure to Analysis. Full training in RPG III will be given, as will a continued career development towards Analysis. The opportunity for European travel exists and applicants must be prepared for short term travel.

## PROG/ANALYSTS

SURREY £12,500+  
Well known insurance group based in N. Surrey utilising ICL 2950 range machines are currently recruiting Programmer/Analysts with limited design experience and Analyst/Programmers with at least one project from start through to implementation. Ideally you will have at least 18 months' exposure to ICL Cobol and wish to extend your career towards Analysis or Project management. In return for your expertise you will receive an excellent starting salary and generous benefits including cheap mortgage facilities.

## SNR ANALYST/PROG

BERKS £12,000 + car  
A progressive and expanding software house based in a pleasant part of Berkshire wish to add a Senior person to one of their major project teams. Applicants must have either an accounting qualification or a wide knowledge of accounting systems. This should be coupled with an understanding of micro processor applications, either CP/M or PPM. Candidates must be able to program in either CIB COBOL or ANSI COBOL.

## SYSTEMS ANALYST

MORTGAGE £10,000+  
Our client, a well-known Life Assurance Company based in the City, is currently looking for a young Analyst to join their on-line development team. The ideal candidate will have eighteen months to two years' commercial experience gained in a financial environment, and will enjoy working on a variety of large projects. Company benefits are excellent and include a mortgage subsidy and an annual bonus.

## HONEYWELL PROGS

CENTRAL LONDON £10,000  
Opportunities to develop interesting systems using "state of the art" technology await you - if you have two years' Honeywell COBOL programming experience. The ideal candidates will also have a knowledge of IDSIL and TDS although training will be given where necessary. Our client can also offer you a pleasant working environment, within a small friendly department, four weeks' holiday, subsidized private pension plan and pension scheme.

## WANG TRAINING

West London To £13,500  
Two companies located in Middlesex and London respectively have current requirements for experienced COBOL Analyst/Programmers. Successful applicants will work on a variety of mini computer systems in varying environments. Qualifications for these exciting positions are a minimum of 2 years' COBOL on any hardware, particularly WANG, or Hewlett Packard. Salaries are negotiable up to £14,000 for Senior people and all large company benefits will be available.

## CICS TRAINING

WEST END TO £10,000 PA.  
International Oil Company based in Central London would like to recruit 2 good IBM COBOL Programmers. The ideal candidates will have around two years' experience, ideally with some CICS, although training in CICS will be provided. Their Computer configuration consists of an IBM 4341, with DOS/VSE operating system. Conveniently situated in prestige offices, this company can offer excellent career moves for the relevant people. Ref 8767.

## RPG II/III PROGS

LONDON & HOME COUNTIES To £18,500  
Opportunities in the London and Home Counties exist for all levels of RPG II, RPG III Programmers and Analyst/Programmers. If you have a minimum of one year's experience and feel that your present position offers no real career progression, then you should be interested in the many positions that exist in the Banking, Insurance, Commodities, Petrochemical and Manufacturing Industries. For more details give SBS a call quoting reference GS.1.

## ANALYST/PROG

CITY To £12,000 + Mortgage  
This respected foreign bank, located in the heart of the City currently wishes to recruit two fully experienced Analyst/Programmers. Ideal candidates will be proficient in "Basic" and "Basic-4", and will have a good background knowledge of PDP hardware. The bank retains PDP kit running under RSTS/E with AIMS. Preference will be given to applicants with "AIMS" and/or banking experience, although this is by no means mandatory.

## ANALYST/PROG

SURREY £12,000+  
Major manufacturing organisation in Surrey are now in a position to recruit a Senior Analyst/Programmer to work in financial and marketing applications. The successful candidate will have four years' COBOL programming experience, some analysis and around 2 years' CICS/PL/1. This would be a good career move for someone who would like to become increasingly involved in Systems Analysis in a good IBM environment. The Company offers an excellent salary and attractive benefits. Ref 5812.

## IBM COBOL

C. LONDON £XCELLENT  
Our Client, a Central London based Consultancy are looking to recruit good IBM COBOL programmers, to work mainly in the financial sector. They are recruiting at various levels, with 18 months' minimum experience. A superb company that can offer excellent career prospects, variety of work, and the opportunity to work on all new IBM products. If you want more career stimulation, please contact us for details of these opportunities. Ref 5587.

These are just some of the positions available. If your particular "expertise" or "ideal job" has not been advertised, then give SBS a call and discuss your career requirements with one of our recruitment team.

**SBS RECRUITMENT**

SCIENTIFIC & BUSINESS SYSTEMS LTD.  
32 BEDFORD SQUARE, LONDON WC1B 3EG  
01-637 9541 (24 hour)

## Database Analyst

Berks to £13K  
National retailing organisation requires senior analyst to help develop on-line database systems. Candidates with degree or similar qualifications should have minimum five years' d.p. experience including previous successful involvement in database design. IBM experience desirable but not essential. Good conditions and prospects. Ref. 657

## Consultant/Project Leader

South Coast to £12.5K + car  
Experienced business analyst required by computer services company to control systems development for clients from feasibility to implementation. Candidates aged 30+ years, with degree or accountancy qualifications, should have strong IBM S/34 or S/38 experience. Attractive location. Excellent prospects. Re-location package. Ref. 538

## APL Analyst/Programmers

Midlands £6-12K  
Large manufacturing company seeks several Analysts and Programmers with recent experience of APL to develop a wide range of applications. Degree standard candidates are preferred with a minimum of 1 year's d.p. experience. Good benefits. Re-location assistance provided. Ref. 693

## Senior Analyst

South Coast to £12.5K  
Engineering company require systems analysts to work on IBM S/34 to S/38 conversion and to implement MAAPICS systems on the new machine. Candidates must be experienced in RPG II and MAAPICS; knowledge of RPG III and/or Basic is desirable. Re-location assistance is available. Ref. 691

Write or telephone:  
**London West Computer Recruitment**  
Evergreen, Dauntsey, Chippenham,  
Wiltshire SN15 4JA  
Telephone: (0249) 891114

# LCR

## London West Computer Recruitment

### Technical Sales Support

Berkshire £8.5-10.5K  
Computer manufacturer requires several junior and senior support staff for pre- and post sales support activities. Candidates ideally will have worked with many computers on scientific and/or commercial applications. Personality and communications ability are important. Attractive location. Some travel. Good prospects. Ref. 688

### IBM Analyst/Programmers

Midlands to £10K  
Several manufacturing companies require senior programmers and analyst/programmers with IBM mainframe experience, Cobol and knowledge of on-line database techniques. Installations include RJE sites and multi cpu configurations. Re-location assistance in all cases. Ref. 700

### IBM Analyst/Programmers

South Coast to £9.5K  
Manufacturing and financial organisations with IBM mainframes seek programmers and analyst/programmers with a minimum of 1 year's Cobol experience. Knowledge of CICS and DL/1 is advantageous. Attractive locations. Salaries according to experience. Re-location assistance. Ref. 701

### Systems Analyst

Bucks to £10.5K  
Financial services company seeks analyst with on-line mainframe database design experience. Degree qualification desirable but not essential. ICL knowledge on advantage. Minimum 3 years d.p. experience required including at least 2 years of analysis. Excellent benefits including low cost mortgage. Re-location package. Ref. 590

### Real Time Project Leaders

West, South, Wales c. £15K  
Major companies developing real time projects in telecommunications, process control, telemetry and industrial automation require experienced team/ project leaders. Degrees in computer science/ engineering are essential; low and high level real time language skills are required. Excellent prospects. Re-location assistance. Ref. 614

### Real Time Programmers

Wilts, South £8-11.5K  
Successful companies engaged in developing telecommunications systems require junior programmers. Real time experience preferred. Appropriate degrees essential. DEC and/or Intel knowledge on advantage. 2 years' experience of a low level or block structured high level language is required. Excellent prospects. Re-location assistance. Ref. 613

### Design Engineers

South, West to £12K  
Vacancies exist for hardware design engineers with small/ medium companies engaged in the development of micro processor based products for medical systems, telemetry, and industrial and office automation systems. TI, Z80 or Intel experience plus some programming ability preferred. Excellent opportunities. Re-location packages available. Ref. 698

### Real Time Process Control

South Wales £11.5 to 13.5K  
Major companies have vacancies for experienced real time software engineers of project leader and manager level. Computer science/ electronics/ engineering degrees essential together with knowledge of DEC, PDP or VAX and/or Z80 or Intel micro processors. Good salaries. Re-location assistance. Ref. 692

# IDEC IS...

## ...Excellence and Innovation in Voice and Data Communications Technology.



### Systems Engineers

Up to £12,000 Hertfordshire

IDEC, an international systems development centre for the new communications technologies, has recently consolidated its operations in a multi-million pound purpose-built office complex in Stevenage. This, combined with our current plans for expansion which are based on a significant increase in business, gives us the opportunity to recruit a number of experienced systems engineers.

Our reputation for excellence and innovation is firmly based on our expertise in voice and data communications technology. The current diversity of customers' requirements means that we can offer our staff experience and responsibility in all aspects of electronics particularly in the areas of computer-based transmission control equipment and office communications

systems (including Local Area Networks and Advanced PABX Developments).

Professional engineers with up to 5 years' experience covering both software and hardware disciplines should consider the IDEC opportunity, our rigorous approach to systems engineering and project management and our commitment to developing the careers of our staff.

For further information please phone Chris Turner on Stevenage (0438) 738020 or write to him with full career details at: IDEC, Six Hills House, London Road, Stevenage, Hertfordshire SG1 1YB.

ITT - IDEC



01-948 5922

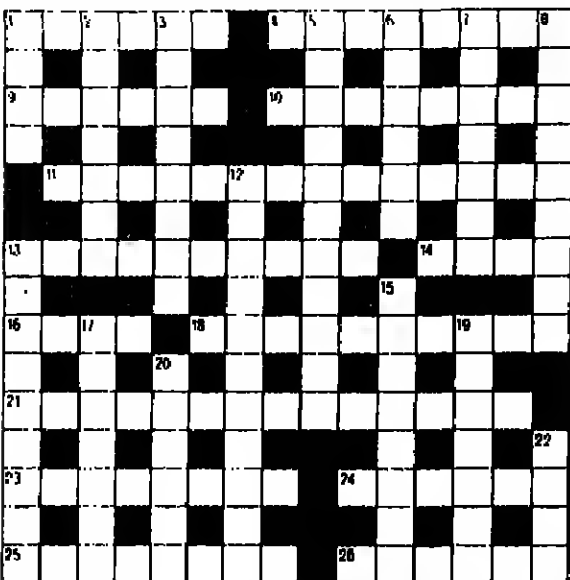


# CROSSWORD

## Prize Crossword No 40

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry received. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS, by first post Friday, May 13. Please use a ballpoint pen to complete the crossword, and include a telephone number at which you can be reached during the daytime.



Name: (Miss, Mrs, Ms, Mr)

Address:

Telephone:

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed: Date:

- ACROSS**
1. It's used for colouring beam in study (6)
  4. Salis one thanks before group goes back (8)
  9. Firearm encountered with Welsh flower stuck inside (6)
  10. A rabid Red, I'm one to be overbearing (8)
  11. Our rail system, it is horrible - a topic for a UK citizen? (7,7)
  13. Refuses to handle vessels in accident-prone areas (5,5)
  14. Engrave on a plate a two-master with no prow (4)
  16. Frame made from southern tree (4)
  18. It measures angles for a farm vehicle (10)
  21. Depart at midnight? Don't tell (5,2,3,4)
  23. Press, etc., stirred up phantoms (8)
  24. A painter has brought back a lot of sand (6)
  25. Section weeded? Side, out somehow (8)
  26. Engineers left an account (6)
- DOWN**
1. Talk fondly around

- RULES AND CONDITIONS**
1. Each competitor may submit no more than one entry.
  2. The competition is open to all readers of Computer Weekly with the exception of the staff of Business Press International Ltd, any printers employed by them or the near relatives of any such staff.
  3. The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
  4. Winners will receive their prizes during the month following the competition.
  5. The decision of the editor on the interpretation of the rules and conditions and on all matters shall be final. No correspondence will be entered into.

FOR CLASSIFIED ADVERTISING USE  
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RECRUITMENT CONSULTANCIES  
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DIRECT ADVERTISERS  
(01) 661 8080

## HARDWARE/SOFTWARE ENGINEERS To £13,000+

Several of our clients, particularly in the Defence, Engineering and Communications environments, are seeking Software Engineers and Hardware Engineers for permanent positions with at least 2 years' experience on mainframes, minis and/or micros. If you have had experience of ASSEMBLER, FORTRAN, COBOL, ALGOL, PASCAL, BASIC, MASM, C, C++, or any Assembly language, we would like to hear from you. LOCATIONS: THROUGHOUT THE HOME COUNTIES.

## SYSTEMS PROGRAMMERS & EXCELLENT + BENEFITS

At least 2 years' experience on IBM mainframe equipment with DOS/VSE or MVS experience is required. ASSEMBLER & database experience would be useful. LOCATIONS: SURREY, HERTS + LONDON.

## COBOL PROGRAMMERS £8,000-£13,000

A senior ICL COBOL Programmer is required to set standards and supervise a group of programmers working on stock control and invoicing applications etc. LOCATION: NEAR GATWICK. Two ICL/VME programmers are required for WEST SURREY.

## SYSTEMS ANALYSTS £10,000-£11,500

An ICL Installation in WEST SURREY requires a Senior Analyst for financial, accounting and insurance applications with database experience for development work. 2 Analysts are required for an insurance company with an IBM mainframe in NORTH SURREY. One analyst is urgently required with IBM System 38 or System 34 experience for CENTRAL SURREY and SOUTH COAST installations.

Please telephone for further details and an application form.  
**AMES PERSONNEL**  
6 CHART WAY, REIGATE, SURREY, RH2 0NZ  
TELEPHONE: REIGATE (07372) 22219 or 22210 (3546)

## DEPARTMENT OF COMPUTING AND MICROPROCESSOR APPLICATIONS LECTURING OPPORTUNITIES IN COMPUTING

Vacancies exist at Principal Lecturer and Lecturer Grade II/Senior Lecturer level. At least one of those appointed must have teaching experience at honours degree level in Data Processing and Systems. Other candidates should offer expertise in one of the following fields: databases, real-time systems, networking, program design and system design.  
Salary scales: Principal Lecturer, £11,931-£15,018; Lecturer Grade II/Senior Lecturer, £9,265-£12,818.  
Further details and form of application from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date 19th May, 1981. (3834)

**TRENT POLYTECHNIC**

## ESSEX WATER COMPANY

Our computer installation currently has two ICL 2865 computers which run under OME/2 environment. A large TP network is supported together with an advanced IMS database application. Development plans include other IMS applications for use within the water industry and possible conversion to VME/2800 environment. We urgently need to fill two vacancies as follows:

## SENIOR COMPUTER OPERATOR c £7,400

For this position at least three years' operations experience is required with a detailed knowledge of the ICL DME/2 or 2803/4/5 or ME28 operations environment. The ability to supervise staff and take responsibility for the running of shifts is essential. Salary is in the range of £6,838 - £9,331 including London Weighting-shift pay of either 12 1/2% or 20% depending upon 2 or 3 shift working.

## COMPUTER OPERATOR c £6,500

For this position, at least one year's operations experience in an ICL environment is essential. The candidate should be educated to at least 'O' Level standard. Salary is in the range of £5,858 - £7,512, including London Weighting, the above shift payments.  
Please write to Mr J. A. Wilkins, Data Processing Manager, for an Application Form or telephone him on extension 289 or 321.

**ESSEX WATER COMPANY**  
342 SOUTH STREET ROMFORD  
ESSEX RM1 2AL  
Tel: ROMFORD 46076



## More than meets the eye...

## DATABASE ADMINISTRATOR/PROGRAMMER to £10,500

Most people know us as the security firm that cares. And we do. However, did you also know that we own the largest Ford truck franchise in Britain, an executive jet, a hotel group and even an industrial cleaning service amongst our diverse interests? These services inter-rotate to form an expanding and highly successful group with an annual turnover in excess of £237 million worldwide. Data processing will continue to make a significant contribution to our success, whether it be in the development of systems or national and international telecommunications networks.

In the first instance either ring me, Roy Bell, on 01-365 1299 or send me your CV with a brief covering letter outlining your suitability for the position. In return, we will send you full information about ourselves and this position.

**SECURICOR**  
583 Fulham Road, London SW6 5UA

## UNIVERSITY OF LONDON GOLDSMITHS' COLLEGE COMPUTER CENTRE PROGRAMMER

Applications are invited for the post of Programmer within the Computer Centre. This post is externally funded for the development of an automated library circulation system. The person appointed will specialise in microcomputer networks and will work on an established project to automate library circulation control. Salary within the range £7,672-£9,265 (increments to £9,265 p.a. inclusive). Write for further details to the Personnel Officer, University of London, Goldsmiths' College, London SE14 6NW. Closing date for applications 28th May, 1981. (3839)

## METROPOLITAN BOROUGH OF Rochdale An Equal Opportunity Employer

## TREASURER'S DEPARTMENT

The Authority owns a variety of batch and on-line systems on a BMB 2858 under VME 2800.  
**F729 COBOL PROGRAMMER**  
£5,352-£9,231  
(Career AF2801 with a bar at the maximum of each grade). Starting salary dependent upon experience. Capable COBOL PROGRAMMER is required and preference will be given to those candidates with VME and TP experience.  
**F730 COMPUTER OPERATOR**  
£5,002-£5,571  
(Inclusive of 12 1/2% per cent shift allowance. Scale 2/AP2 with a bar at the maximum of Scale 2). Experience in operating ICL equipment is required, preference being given to those with a VME background.  
Application forms available (quoting ref. no.) from the Chief Personnel Officer, 20 Old Hall, Manchester Offices, Smith Street, Rochdale OL11 1JG, Tel: Rochdale 47474, Ext 9622 to be received not later than Wednesday, May 19th, 1981.

## Temporary PROGRAMMER in Computer Graphics

Are you experienced? An opportunity for a computer graphics specialist to become responsible for the development and implementation of the present software in particular, for programme suitable for the Polytechnic's Faculty of Art and Design. A degree in art and design subject is essential, together with substantial experience in modern computer operations systems, computer graphics techniques, FORTRAN and other higher level languages. Salary according to experience at an appropriate point on the scale £5,042-£9,222.  
For further information and application form post to: Mrs J. A. Wilkins, Personnel Officer (Ref 1471), Middlesex Polytechnic, 114 Crickle Side, London NW1 9PL. Closing date 19 May 1981. (3829)

**Middlesex Polytechnic**

## INFORMATION TECHNOLOGY INVESTMENT ANALYST

## MANCHESTER STOCKBROKERS

As leaders in the provision of investment research on the communications and computer industry to institutional investors, we need another person from the industry to maintain this reputation.  
The job involves: identifying industry trends and investment opportunities; visiting companies and evaluating management and product potential; publishing background research and company appraisals; marketing recommendations to banks, insurance companies, trusts, etc.  
You are likely to have worked in an analytical, planning, or market research role and will need maturity and credibility to develop business in a competitive environment. An attractive salary is offered together with an annual bonus, non-contributory pension, and excellent prospects. If you wish to join a small and enthusiastic team within a medium sized firm of stockbrokers then contact:  
Neil Barton,  
Henry Cooke, Lumsden & Co.,  
Arlingworth House,  
Parsonage Gardens,  
Manchester M20 2AH  
Tel: 061-324 2322 (3827)

# Do you have a Sales Pedigree?

## IF SO, JOIN THE THOROUGHBREDS AND EARN OVER £24K PER ANNUM

Unrivalled in virtually every category of comparison, this company offers users a complete range of Information Systems and state-of-the-art software capabilities. To maintain their supremacy in

the U.K. we are assigned to recruit the following key sales personnel, all of whom will earn a 5 figure basic salary, substantial long term guarantees and company car or car allowance.

## Large Systems Sales

N. WEST, YORKS, N. & E. MIDLANDS

Living within a 50 mile radius of Leeds, you should have a 1st class record of achievement over at least 3 years in the sale of large, sophisticated mini computer systems to either end users or OEM's.

## Major Accounts

MANCHESTER

The prime requirement is to have opened and developed Major Accounts negotiating at the highest levels. A positive and mature outlook combined with a high degree of self-motivation is essential.

## OEM Sales

SCOTLAND & MIDLANDS

If you have a minimum of 2 years with a major manufacturer, do not ignore these opportunities. You will join an established and successful sales force which has the benefit of full local support both in Scotland and the Midlands.

To be a part of this winning team, ACT NOW!—for a completely confidential discussion.

Telephone 061 236 1157 during business hours, or Evenings until 9p.m. and weekends, telephone JEFF WALTON on 061 962 0002 or ROY TORRES on 0422-823153

**INTERFACE**  
RECRUITMENT & SELECTION CONSULTANTS LTD

Manchester House, 86 Princess Street, Manchester M1 6NG. Tel: 061-236 1157

# A WORLD OF DIFFERENCE TO YOUR CAREER

**REAL-TIME SOFTWARE ADVANCED DATA COMMUNICATIONS**

**South West Coast.**  
An established and profitable leader in the high technology industry is currently seeking to expand its research and development teams.  
The positions offer the opportunity to pioneer new techniques in a number of advanced communication projects.

**Chief Software Engineer**  
Earnings to £15,000  
An enthusiastic and determined person who can demonstrate both technical and project management skills is required for the prestigious post of Chief Software Engineer. You will probably be a Project Leader in a communications or telecommunications environment ideally with four years real time software design experience. Reporting to Senior Management you will be responsible for the overall guidance of a number of teams of experienced professionals.  
The post offers you every chance to develop your experience in financial, technical and managerial areas.  
A generous relocation package is available for all of these positions together with attractive benefits. For further details telephone Miles Richards on 01-938 1804 (24 hrs) / 01-847 2385 (7 pm - 9 pm), or write to him at the address below.

**Project Leaders**  
Earnings £11,000 - 14,000  
The continued expansion of the design teams coupled with internal promotions has now created openings for project leaders.  
If you are presently a Senior Programmer or Designer with some supervisory experience in a real time environment, this will be your opportunity to control and lead a highly motivated team.

**Software Designers**  
Earnings £10,000 - 12,000  
You will join a small and professional design team with responsibility for developing communications systems from initial design through to implementation.  
Ideally you will have three to four years experience in real time programming or software design and development, with an exposure to low level assembler or high level languages. The growth and professional standing of this company will ensure you a career development unlikely to be surpassed.

**IPP**  
Information Processing People  
20 Kensington Church Street, London W8 4EP. Telex 22861



## SALES BIT

Quality of Management — 50

## Weighing up the job seekers

PROFESSIONAL sales applicants will expect to have precise details about remuneration, targets, training, company, with its professional advantage of competent salespeople. Yet this could be only the start of your recruitment problems, for now you have to "sort out the sheep from the goats".

If you have a personnel manager with a good understanding of salespeople, let him or her sort out the initial response. Personnel people are usually able to identify the valid applicants, the time-wasters, the job hoppers and those who should never have applied in the first place. Often they are more aware than the sales manager about any inadequate salespeople who are already in the company's employment.

So they generate a standard letter and tell those who do not qualify — thanks, but no thanks.

To the others, they send out an application form, and this is where the role of the sales manager is likely to begin. Don't let the personnel department simply send out that tired old application form. Argue it with a single sheet containing questions that make a real contribution to the selection process as far as salespeople are concerned:

1. How long have you been selling? How long selling our product in our market place? What formal training have you had? What has been your achievement against sales targets over the past four years? Provide names of some companies to which you have made significant sales in the past two years. What kind of job are you really seeking? — and so on.

It can be a considerable aid in deciding who should be interviewed.

Having decided upon those you want to see, there are some important considerations to be made before the first interview at your office.

**Job Specification:** If you haven't created one yet, now is the time to do so. You can't expect an applicant to get enthusiastic about working for a sales manager who doesn't have detailed knowledge of the job. Can-

## COURSES

WITH the aim of teaching accountants how to program in Basic, a course, Computer Programming for Accountants will be held at Glasgow College of Technology from June 7 to 9. It is organised by the Institute of Chartered Accountants of Scotland and the fee is £245 plus £36.75 VAT. This includes documentation, coffee, lunches, afternoon tea, and unlimited computer time. Each participant will have exclusive use of a visual display unit and access to the full facilities of a large computer. Hobbyist microcomputers will not be used. Participants will write several programs and will have assistance from a number of tutors, all with wide experience of commercial computing. Further details from the organisers on 031-225 5673.

didates will expect to have precise details about remuneration, targets, training, company, with its professional advantage of competent salespeople. Yet this could be only the start of your recruitment problems, for now you have to "sort out the sheep from the goats".

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1. How long have you been selling? How long selling our product in our market place? What formal training have you had? What has been your achievement against sales targets over the past four years? Provide names of some companies to which you have made significant sales in the past two years. What kind of job are you really seeking? — and so on.

1. This is the company.  
2. This is the job.  
3. Let's go through your career history.  
4. Please answer specific questions about your experience and achievement.  
5. Summing up.

This is a fairly obvious segmentation of the interviewing process in a predictable, yet modifiable sequence, but it achieves a number of necessary objectives:

1. The candidate gets to know all about the job.
2. The interviewer controls the interview.
3. The structure makes it easy to keep the dialogue relevant and the duration of the interview predictable.
4. It is easy to terminate the interview prematurely on the completion of one of the discrete elements if circumstances demand it.

We could not thoroughly evaluate our candidates, yet maximise our use of time without it. I am sure a similar approach is crucial for any sales manager who wishes to use interviewing time effectively.

The structure need not be the same, but there has to be a planned format that ensures you get to know all you wish to know about the candidate, and he discovers all he wishes to know about you.

Alan Williams

## PUZZLE ANSWER

THE letters used are PROBLEMIST, and an "orderly" sequence 0 to 9 written beneath these capitals left-to-right does indeed provide immediate identification.

**SMR**  
Sales & Marketing Recruiters Ltd  
A Sales and Marketing Recruitment Company

**SALES EXECUTIVES**  
CONSULT THE CAREER DEVELOPMENT SPECIALISTS

When you are rising with the major factors in your life you can only afford the best, and few things are more important than the development of your career. Certainly, that is how the major computer manufacturer or level about their personnel selection and why such companies as CONTROL DATA, COMPUTER TECHNOLOGY, DATA GENERAL, HONEYWELL, PERKIN ELMER, REDIFFUSION, SPERRY UNIVAC and many others continually use our organisation for the recruitment of experienced sales people.

We fully understand the needs of such companies as well as knowing about the many job opportunities that now appear in the press. These well expected names depend on our professional skills and confidentiality. Can you afford loss?

Contact: Alan Williams, Peter Hubble  
Allister Scott or Roger Dodd — ANY TIME!

LONDON & SOUTH MIDLANDS & NORTH  
25 Old Street, London EC1A 3DF  
31-33 St. Paul Street, London EC4A 3DF  
SALES & MARKETING RECRUITMENT

**Ogwr**  
Borough Council

Applications are invited for the following posts:  
TREASURER'S DEPARTMENT

**COMPUTER MANAGER**  
Salary Grade: P.O.T. (3-7) — £10,071 to £11,184 P.A.

The Council requires a person with enthusiasm to supervise the computer operations throughout the Authority. The post offers an exciting opportunity to shape the development of a computer operation, where advanced development of on-line systems and distribution processing is envisaged. The ability to liaise with all levels of management in user departments is of vital importance and knowledge of ICL ME 28 Computers is essential although the Council is now developing into other compatible microsystems.

An essential user car allowance is payable. Temporary housing accommodation and removal expenses, leading allowance and/or assistance with legal costs are available in appropriate circumstances.

**COMPUTER AUDITOR**  
Salary Grade: A.P.S. £7,791 to £8,328 P.A.

Applications are invited for the newly established post of Computer Auditor. This post is with the Audit Section and although the work will mainly be on Computer Audits, the successful applicant may be required to carry out other audit work. Analysis or programming experience is essential and experience of audit work is desirable.

Temporary housing accommodation, removal expenses, leading allowance and/or assistance with legal costs are available in appropriate circumstances.

Application forms which must be returned to the Personnel Officer by Friday, 26th May, 1983, are obtainable from him at the Municipal Building, Queen Street, Bridgend, Mid Glam. CF31 1LX. Tel: Bridge 0696 82141, ext. 3208.

Conveyance of members, either directly or indirectly, will disqualify a candidate.

**FAST GROWING SOFTWARE SPECIALISTS ...**

... need talented Analyst/Programmers to play key roles in an exciting programme of planned expansion.

The company is internationally recognised as an innovative leader in the provision of software for communication purposes between IBM installations.

**Analyst/Programmers — West Yorkshire**

To join a small team based in the pleasant town of Otley handling a wide variety of new technology design and development projects. Around 25 years programming experience (including at least 12 months involvement with IBM 3438) is essential together with an interest in communications. Salaries up to £11,000.

**Sales Support Analyst — London**

To provide "front line" technical support to sales personnel and customers in the London area. This will involve feasibility studies, installation and service, demonstrating the software, user training and the preparation of quotations. You will need 24 years relevant experience in a close user/customer contact environment together with some understanding of O&M techniques. Salary around £10,000.

These jobs all offer opportunities to travel overseas and the chance to join a dynamic organisation with exciting future prospects.

Contact: Julie Peake on Leeds (0532) 445131, PER, Westminster House, Boyd Street, Leeds LS1 5BE.

Applications are invited from: PER Executive Selection

**smis**

**PROGRAMMERS/SENIOR PROGRAMMERS**

Salary scale to £9,500 p.a.

As part of Sears Holdings we provide DP services for group companies covering a wide variety of applications.

The installation is based on an IBM 3081 and 3031 AP with laser printers and 3380 disks. A purpose built computer centre is under construction for completion this year when an IBM 3083 will be installed.

Due to internal transfers within DP we have vacancies for programmers with a minimum of 18 months COBOL experience. The successful applicant will join project teams developing systems using JSP techniques and ROSCOE, each programmer working from their own terminal. Prominent in our developments is the use of CICS and DL/I. Currently under evaluation in the installation is the MAESTRO development work-station.

Progression is based on personal achievement, and in addition to regular salary and performance reviews the company offers an excellent working environment plus a generous fringe benefits package including relocation assistance where applicable, subsidised meals and free transport to many parts of the Leicester area.

For an application form ring Leicester (0533) 877051 quoting ref: HO 148

**SEARS MANAGEMENT INFORMATION SERVICES**  
PO Box 114, Sunningdale Road, Leicester LE3 1UR

**Two Programmers**

required to work at School Computer Development Centre, Birchov Road, Bilborough, Nottingham in order to develop software for use on the BBC microcomputer in schools with particular reference to the use of special educational needs. An interest in educational software is desirable. Salary circa £7,000.

Write for further details to: The Inspector for Computer Education at the above address.

**university college of swansea**

Microprocessor Centre Manager

Applications are invited for the post of Manager for the Swansea Microprocessor Centre. The Centre is established in the University College at Swansea and provides a service to industry and the College. Applicants should have a degree, or equivalent qualification, together with appropriate experience with microprocessors and their applications.

Responsibilities of the post include the day-to-day running of the Centre, liaison with users and the continuing development of the service. The post is suitable for a person with demonstrable technical competence who is seeking to extend and apply managerial skills.

The salary will be on the scale C10,675 to £15,688 per annum together with URB/UDPS benefits.

Application forms (three copies) and further particulars may be obtained from the Personnel Officer, University College of Swansea, Singleton Park, Swansea SA2 8PP, to which they should be returned by Friday, June 11, 1983.

**DAVY COMPUTING LIMITED**  
would like to hear from **FORTRAN/COBOL PROGRAMMERS**

to fill a vacancy within the COMPAID Division. This software package is a market leader in the metal take-off and lacustric drawing of pipework used in process plants, and is an interesting mixture of "commercial" and technical programming.

The work of the Division includes:

- 1) Maintenance support for existing COMPAID clients.
- 2) Development into other applications e.g. of materials management, eg: Procurement. A prime 550 to the development computer, using FORTRAN.

Programmers are encouraged to develop their understanding of the COMPAID product as well as their computing skills. There is a close working relationship between programmers, sales staff and engineers.

Candidates should have four years' industrial programming experience, including two years' FORTRAN, preferably FORTRAN 77. Davy Computing Limited is a Davy Corporation company which is one of Europe's largest groups providing a total engineering and contracting service in the field of heavy capital plant.

Applications, including a full CV to:

Mrs D. Baker  
Davy Computing Limited  
Moorfoot House  
2 Clarence Lane  
Sheffield S3 7UZ

**Davy**  
Computing Services Association

**CONTRACTS**

IBM COBOL ASSEMBLER IMS-TCAM  
CORAL 66 REALTIME PROGRAMMERS  
ICL 2900 IDMS VME/B COBOL  
DEC PDP 11 BASIC+ (INSURANCE)  
IBM 8100 COBOL  
IBM COBOL MVS ANALYST/PROGRAMMERS  
IBM COBOL JACKSON  
IBM IMS DB/OC COBOL ANALYST/PROGRAMMERS  
IBM CICS COBOL PROGRAMMERS  
ICL DRS CICS COBOL PROGRAMMERS  
TECHNICAL WRITERS — VARIOUS PROJECTS

NORTH WEST  
NORTH WEST  
NORTH WEST  
SOUTH  
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SOUTH  
SOUTH

**dp SUPPORT SERVICES**  
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"We look forward to hearing from you."

01-434 2042 7 Swallow Street, London W1R 3HD

**CAREER OPPORTUNITY WITH LEADING BRITISH MICRO MANUFACTURER IN OXFORD**

**SALES OFFICE MANAGER**

£10.4K to £15.7K

We hold a strong market position in education, research and engineering. We are developing our new generation of computers and instrumentation products for these markets and will be breaking new ground in other markets both in the UK and abroad.

As the organisation develops to meet new sales and marketing challenges, the demands on the existing sales office resource will increase significantly. The sales office currently covers three main areas of telephone sales, technical support and order processing and will in future function as a shared selling and support resource to sales and marketing managers from different market areas.

A change to the current management structure creates a new role for a Sales Office Manager to manage, maintain and develop this resource.

The new post calls for someone with sound office administration experience who can train and develop a mixed ability group and maintain a high level of motivation in a pressured environment. You will be responsible for monitoring and improving standards of performance. You will also have responsibility for the day to day personal welfare of the people reporting to you.

If you are interested in this vacancy please contact Polly Keane on Oxford (0865) 726136 or write for an application form, quoting ref: SOM/CWS

**RESEARCH MACHINES**  
MICROCOMPUTER SYSTEMS

RESEARCH MACHINES LTD Mill Street, Oxford OX2 0BW Tel: (0865) 726136

**OPPORTUNITIES WEST OF LONDON**

SWINDON NEWBURY READING SLOUGH  
M4  
M3 FLEET CAMBERLEY STAINES  
BASINGSTOKE

**Communications Programmer**  
X25 to £15K

Our client is at the forefront of remote data communications technology. A communications programmer is required to be responsible for design thru to implementation (including coding and testing) of the X25 interface to the PSS public data service. He/she will be well versed in assembler (ideally MACRO 11) and have a good understanding of communications. This exciting role offers a high starting salary plus the opportunity to be involved in sales support activities. Ref: K17

**Sen. An/Prog. REAL TIME**  
READING to £10K

A Market leader in the design and manufacture of high quality data capture systems, seeks an additional senior analyst programmer. The successful candidate will have sound experience of real time applications, including assembler on DEC, INTEL or Z80. PASCAL would be advantageous. He/she will have had previous supervisory experience, be capable of planning projects and scheduling manpower, and enjoy direct customer liaison. This will involve a wide variety of non-defence projects in a pleasant in-house environment. Ref: K28

**ICL VME Specialist**  
BERKSHIRE £10K-£14K

Leading international systems software company is currently developing a new range of software products for the ICL VME operating system. Candidates should have a sound knowledge of the VME system, be familiar with SFL and have experience of languages such as COBOL or PASCAL. In return, the company offers a career position within an innovative software environment together with the opportunity to broaden your knowledge of software and hardware products. Ref: AC3

**BASIC Programmers**  
BERKSHIRE to £9K

A fast expanding and highly successful computer services company seeks to recruit programmers with between 1 and 3 years BASIC experience in a commercial environment. You will be actively involved in developing commercial systems on a variety of minis and micros. Career progression in this stimulating environment is excellent with an early opportunity to move into design/teem leading role. Ref: AC10

**Sen. Programmer ME29**  
N. HANTS to £10K

A specialist in the storage and distribution of temperature controlled products to national food multiples is embarking on an ambitious development phase, including plans for DATA DICTONARY, IDMS and networking at a later date. A senior programmer is required to augment their ME29 team using RANCO COBOL. A sound knowledge of MTS or TME/TP is essential. Benefits include good salary, pleasant environment, flexible hours, realistic career development and, of course, the opportunity to learn new skills. Ref: K11

**Programmer DEC RT11/CTS300**  
WEST LONDON to £8,500

Our client, a multinational management service organization, with a turnover of \$800,000,000 develops advanced systems for particular market sectors using a mixture of hardware (DEC, IBM) software and telecommunications facilities. An opportunity has arisen with their Travel and Leisure division for a Programmer to work as part of a team on the development of Hotel Reservation Systems. Programming experience on under the RT11 or CTS300 operating system is essential. The position offers the opportunity to broaden experience and progress into either a client contact role or a more senior software development position. Ref: KX10

**MCL**  
McCOURT COUSINS LTD, 27-29 Grayfriars Road, Reading, Berkshire.  
Tel: Reading (0734) 595346 (24 hours)